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Which discs dazzle in our Movie Awards?

Welcome

The end credits have rolled on 2018 and it was quite a ride – Ultra HD Blu-ray gained strength despite saying goodbye to Oppo players, OLED TVs and direct-lit displays fought a battle over black level and brightness, and 8K began the year as a concept and finished it as a consumer proposition. What does 2019 have in store?



We look into our crystal ball on p20.

Also in this special yearbook issue you'll find us revisiting our favourite home cinema hardware

from the last 12 months, ranging from AVRs, processors and speaker systems, to TVs, projectors, soundbars and more.

It's the place to look if you're seeking a system upgrade.

And continuing the celebratory mood, our annual Movie Awards rounds up the very best Blu-ray and 4K releases of 2018, be they catalogue classics or big-budget blockbusters. Enjoy the show!

Mark Craven
Editor



MENU



CONTRIBUTORS



John Archer:
The experienced TV tester cut his teeth as an early HCC staffer



Jon Thompson:
Film producer and post-production expert delves into Hollywood and AV



Steve May:
HCC's former Ed. is one of the UK's most respected AV journo's



Martin Pipe:
Technical expert Martin is renowned throughout the industry



Richard Stevenson:
Former Editor of the UK CE trade journal ERT



Ed Selley:
Audiophile Ed mixes his home cinema passion with a love of vinyl



Steve Withers:
Movie fan, display calibrator and object-based audio obsessive

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COVER STORY 114 Certified AV-Holics!

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A home cinema without compromise



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BULLETIN

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Electric dreams

Optoma DE-9120ETT & DE-9106ETT → www.optoma.co.uk



As Optoma's projector lineup is increasingly 4K-focused, it's no surprise to find it debuting screens certified for 4K use by the ISF. The new range comes in 16:9 ratio 120in (£1,450) and 106in (£1,100) designs, and uses a 'unique tension adjustment system' that keeps the screen fabric taut. The drop-down mechanism is activated by IR remote (an external IR eye is included for hidden installations), while a 12V input allows the screen to be fired up (well, down) from a compatible PJ or AVR.

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Mind the DAW

Wilson Audio Sasha DAW → www.absolutesounds.com

Wilson Audio pays homage to company founder David Andrew Wilson with its new Sasha DAW floorstander, a high-end three-way design that replaces the previous Sasha Series 2. A modular construction (adjustable for bespoke time alignment) keeps the speaker's upper (mid/high) and lower (bass) enclosures separated – the latter incorporating two 8in woofers, resulting in a claimed frequency response down to 20Hz. Pricing starts at £40,000 per pair...



HD Ready for gaming fun



Another new launch from Optoma, and while the native WXGA (1,280 x 800) resolution of its

H116ST projector doesn't scream cutting-edge, the short-throw lens (claiming a 100in image from around a metre), 3,600 Lumens claimed brightness and £500 asking price will make up for it. Aimed at gamers and telly addicts seeking a living room friendly upgrade over their flatscreen, the PJ has an in-built 10W speaker and HDMI, VGA and powered USB connections.
www.optoma.co.uk

Flexson stands up for Sonos



Sonos accessories specialist Flexson has released its S1-DS stand for the Sonos One smart speaker

and entry-level Play:1 model. Priced £25, this desktop cradle features the same footprint as its partnering devices and is available in the same black and white guises – the idea being it offers discreet support and better angles the Sonos speaker towards its listener. For those using Play:1s in a home cinema setup, Flexson also sells wall-mounts, ceiling-mounts and floorstands.
www.flexson.com

BT's new hub streams on

Advanced router pairs with Wi-Fi Discs to turn not-spots into hot spots

BT has launched a mesh Wi-Fi solution which it says will put an end to Wi-Fi dead spots around your home, and unlock the speed potential of the BT broadband network. The prime benefit, it told *HCC*, is more reliable, stable streaming and improved gaming performance.

'In rooms where users may have struggled to receive a signal, our Complete Wi-Fi solution will enable them to reliably stream 4K,' insists Marc Allera, CEO of BT's consumer business.

Available to BT broadband customers taking its BT+ package, for an additional £5 per month, Complete Wi-Fi is built around Wi-Fi Discs which pair to BT's new Smart Hub 2. The latter is touted as the company's most advanced router yet, and employs seven antennas with smart channel selection, allowing devices to auto connect to the fastest Wi-Fi channels, plus smart scan features. If the router detects a network problem, it reboots automatically.

Each BT Wi-Fi Disc packs four antennas and is able to run both 2.4GHz and 5GHz concurrently. An Ethernet output can be connected to an Ethernet



Marc Allera: 'In rooms where users may struggle to receive a signal, our solution will enable them to reliably stream 4K'

switch for wired connections if required. The new Wi-Fi Discs do not work with any other BT router.

The telco suggests that a typical

four-bedroom home could see an increase in Wi-Fi speeds of up to 25 per cent around the home with just one Disc, but it will supply up to three at no additional charge to ensure households of all sizes enjoy maximum coverage.

Users can set the system up themselves, using the My BT smartphone app. This reveals the strength of Wi-Fi around the home, and pinpoints where Discs should be best deployed for extended coverage.

'Whether it's converting the attic into a gaming room or making a spare room into a home gym where you can stream music or work-out videos, Complete Wi-Fi opens up a world of possibilities,' adds Allera.

According to research from Kantar, BT's Superfast Fibre gives an average speed of 67 Mbps, but this can be less if customers are a significant distance from their BT cabinet exchange. Those with access to BT Ultrafast Fibre can achieve speeds of 100 Mbps.

Home improvements

In a recent survey for BT, 43 per cent of respondents believe that poor Wi-Fi restricts what they want to do at home. Half (52 per cent) are put off living in, or buying, a home with Wi-Fi black spots, and 12 per cent admit to arguing with others in the house about Wi-Fi. Around a quarter of owners say with improved Wi-Fi coverage they would create a dedicated games entertainment space in their house.

The report also notes an increased demand for voice control, with 22 per cent of respondents suggesting it would be their preferred method of interaction with connected products.



BT's Wi-Fi Disc (pictured) links with its new Smart Hub 2

Playlist...

Team *HCC* spins up its disc picks of the month

Ant-Man and the Wasp 3D (All-region BD)

3D fans will find plenty to enjoy in the size-changing shenanigans of Marvel's latest superhero sequel thanks to this platter's immersive stereoscopic encode.



Mission: Impossible - Fallout (UHD Blu-ray)



Stylistic choices may take a bit of a shine off the 4K visuals, but this blockbuster is still loaded with hair-raising action scenes.

Red White and Zero (Region B BD)



The BFI continues to dig through the Woodfall catalogue with a stacked Blu-ray release for this intriguing portmanteau film.

Swimming with Men (Region B BD)



Rob Brydon dons his Speedos for this amiable aquatic comic drama about synchronised swimming.

The Children Act (R2 DVD)



A superb central turn from Emma Thompson anchors this moving adaptation of Ian McEwan's novel.

At the 'plex...

Heading out to see a flick?
Catch these this month

Welcome to Marwen

January 01: Robert Zemeckis directs Steve Carell in this offbeat drama (based on a true story) about a man who loses most of his memory following a violent assault, and builds a scale model of a World War II-era town in his backyard to aid his recovery.

Stan and Ollie

January 11: Steve Coogan and John C. Reilly star in this affectionate biopic following legendary comedy double-act Laurel and Hardy's troubled tour of the UK during the early 1950s.

Glass

January 18: This third instalment in M. Night Shyamalan's superhero saga brings together Bruce Willis's David Dunn, Samuel L. Jackson's Mr. Glass and James McAvoy's The Beast (plus his myriad other personalities) for one final super-powered showdown.

The UK's best cinema?

We go behind-the-scenes at the Odeon Luxe Leicester Square

Christmas came early for film fans this December as the doors finally opened on the first UK Dolby Cinema. The Odeon group had spent most of 2018 refurbishing London's iconic Leicester Square venue, transforming it into a flagship 'Luxe' theatre, and HCC was invited for a tour as it underwent the final stages of its makeover.

The Leicester Square Odeon first opened in 1937, and has since hosted over 700 film premieres. Yet despite its heritage, the building had never been listed, not even the fascia, which gave architects and developers free rein with the build. They have strived to keep elements of its original Art Deco design alive, however, even as the state-of-the-art sound and vision went in. For instance, the theatre's Compton organ has been restored to full functionality, and there's a working orchestra pit.

During our tour, seating had yet to be installed, but there had been significant improvements to the seating rake. Large and deep, the shape of the auditorium doesn't fit with modern cinema designs. It's far wider than the typical shoebox, which Dolby says presented its own set of challenges. Designers needed to ensure sound travelled seamlessly above and below the theatre's balcony. Unusually, line array speakers more typically seen at concert venues hang from the ceiling to provide an even spread of sound through to the rear of the auditorium, and are said to significantly improve dialogue intelligibility.

'It'll be a great audio experience,' promised

Chris Kukshel, Dolby's Director of Product Marketing, of a system that uses more than 400 speakers.

Dolby Cinema combines its Atmos audio with proprietary projection technology. A dual laser PJ implementation results in a higher dynamic range, wider colour and greater brightness. 'In a typical cinema there would be a single projector with a xenon bulb, which would put out 14 foot lamberts (aka 48 nits),' explained Kukshel. 'Dolby Cinema's dual laser light projectors offer around twice that, and our contrast ratio is a million to one.'

We snuck into the projection booth to find the two Dolby Cinema PJs, produced by Christie, still boxed. A bespoke hatch has been created for the projectors, which sit side by side and are used in unison. Yet the theatre is keeping hold of its vintage 70mm model, for special presentations.

A key innovation being introduced is a movable screen. Along with the front stage audio system, it's

on a framework that can be shifted back and forth. Stage space can therefore be maximised for special events and live shows, and it's sonically decoupled from the rear wall, which prevents audio finding its way into the adjoining hotel. A large isolation wall has been built behind the screen in order to further block sound going backwards.

Regards pricing, an early uproar over £30+ tickets masks some detail – the cinema has tiered options with seats offered for as little as £10.75.

Work on the Odeon Luxe Leicester Square was in full-flow during our visit



Another depth charge from SVS

New 3000 Series subwoofers promise 'subterranean frequencies'

US brand SVS is adding to its award-winning subwoofer range with a new 3000 Series, arriving in the UK in January via distributor Karma AV.

The new lineup features two models – the £1,275 SB-3000, which uses a sealed cabinet, and the £1,550 PB-3000, which is a ported design.

The subs are more compact than SVS's existing 4000 Series, but still use front-firing 13in drivers and offer control and customisable parametric EQ via the brand's smart device Bluetooth app.

Says SVS of its new woofers: 'The 13in 3000 Series' drivers are entirely new designs combining proprietary features including a massive dual-

ferrite magnet motor assembly, lightweight and rigid aluminium cones, and a long-throw parabolic driver surround built for extreme excursion, SPLs and longevity.'

Powering both is an onboard 800W amplifier, with 56-bit DSP silicon to control the output.

The claimed reach of the PB-3000 is 16Hz-260Hz (+/-3dB). The SB-3000 is rated at 18Hz-270Hz. www.svsound.com

The PB-3000 (right) is supplied with bungs for its front ports





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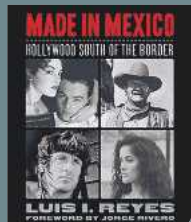
Die Hard: The Ultimate Visual History



Yippee-ki-yay! Titan Books is celebrating the 30th anniversary of our fave Xmas movie with this

hefty new £35 hardback. Anybody hoping for a considered critical appraisal of the films (especially the sequels) will have to look elsewhere. But if you're after an exhaustive exploration of the making of the movies (particularly the first) packed with rare concept art and brand-new interviews, then this is a must-own.

Made in Mexico



Archivist and film scholar Luis I. Reyes takes a look at over 100 Hollywood movies

(everything from *The Treasure of Sierra Madre* and *Magnificent Seven* to *Remo Williams...* and *Spectre*) that were made 'South of the Border' in this £16 guide book from Applause Theatre & Cinema Books. As well as providing full production details for each entry, Reyes explores the historical and economic forces at play over the decades.

Fearless and Fantastic!



Aimed at younger superhero fans, this dinky £13 hardback shines a welcome

light on the female heroes of the Marvel comic book universe. Split into four sections, DK's illustrated guide provides snappy profiles for a diverse pantheon of characters, from the familiar (Black Widow and Captain Marvel) to the more obscure (Squirrel Girl and Kamala Khan).

INTERVIEW

Protect and preserve



Theo Gluck, Director of Library Restoration and Preservation at the Walt Disney Studios, was in the UK for a festival screening of *Lady and The Tramp*. **Martin Dew** picked his brains

What does your role at Disney entail?

I'm part of the Studio Operations Mastering team and I primarily oversee the digital restoration of our library titles, which encompasses everything from *Steamboat Willie* to *Pinocchio* to *Mary Poppins* to *Dead Poets Society*. We have also worked on the restoration and reconstruction of dozens of the classic animated shorts, including *Flowers and Trees* (1932), the first commercial use of 3-strip Technicolor.

Are you a film lover or settled in the digital age?

I will forever be a film lover. However, I am also aware of the logistical realities of the digital world we live in and how content is now captured and presented. We have to be nimble from iPod to IMAX. Certainly the range of digital tools now available offers restoration possibilities previously unobtainable in the photochemical world. The ability to properly capture the image energy and resolution held in these decades-old negatives through digital scanning far exceeds what would have been seen in a dye-transfer Technicolor print some 75 years ago.

How are Disney's very important film assets preserved (presumably they're not in cardboard boxes under someone's desk...)?

The Studio opened its new state-of-the-art Motion Picture Archive facility on the lot in 2015, so our safety film assets are stored here. Our nitrate film assets are housed at the Library of Congress' National Audio Visual Collection Center. We are also engaged in a comprehensive library digital preservation initiative, scanning our original negatives at 4K 16-bit.

What's the most satisfying Disney animation restoration project you've worked on?

That's a tough question. I would have to say *Bambi* is the most memorable as it was our first digital restoration from scans of the original 'successive exposure' nitrate camera negative. It validated the importance of us preserving and caring for our original negatives for decades. It was that foresight which allowed us to undertake this project and yielded such breathtaking results. The level of detail and sharpness was a revelation to the team when we started reviewing the recombined colour images. I also adore *Pinocchio* for its artistry and music. Being a fan of widescreen cinema, it was a real treat to work on *Lady and The Tramp*.

What were the challenges of preparing a 70mm print for premieres like *The Lion King*?

As you can well imagine, 70mm release print

manufacturing, prior to the advent of DTS timecode on 70mm, required considerable time and planning to stripe and sound as many as 200 prints. This made it a very complex and lengthy process. After the release of *Beauty and the Beast* in 70mm in 1991, the Studio reserved the format for special event screenings.

For *The Lion King* we made four special prints (including back-ups) for the run at Radio City Music Hall in New York City. Each was printed two points lighter to help with the resultant image brightness, given the extreme throw from the projection booth to the screen. The 5.1 audio was actually provided by a 35mm Dolby Digital print interlocked to the 70mm projector (both running on platters). As a back-up, the 70mm print was striped and sounded two frames advanced, again due to the vastness of the venue. As such, although the film was shown technically out-of-sync it was perceived as being in sync.

For a Blu-ray master, do you aim to preserve a filmic look, or is the goal to create the cleanest image?

Both features are equally important. Preserving a filmic look, including grain, is a key part of the cinema's aesthetic experience. Dirt removal and repairing other film damage is vital to allow for a distraction-free presentation of a film. For our classic animated features we will also partner with the Studio's Animation Research Library to examine surviving cels and backgrounds, as well as screen dye-transfer Technicolor prints for colour reference.

Lady and the Tramp was Disney's first widescreen (2.55:1) animated feature. Were there differences in the way you approached the restoration?



There wasn't a need for any special considerations. We knew going in that we were going to preserve the original 2.55:1 aspect ratio. Certainly working on a CinemaScope film meant there was far more picture area to review and clean, as all of the other pre-1952 titles we had restored were 1.37:1. We were struck at how well photographed *Lady...* is given its use of early anamorphic lenses.

Lady and the Tramp screened at the Science and Media Museum's Widescreen Weekend in October. For updates about next year's festival, visit www.scienceandmediamuseum.org.uk

This month's top 10 news stories in handy, bite-sized chunks...



1 Arcam teams with IMAX
Audio corp Arcam has announced its participation in the IMAX Enhanced certification and licencing programme. Arcam's first wave of IMAX Enhanced hardware consists of the AVR390, AVR550, AVR850 and AV860 – each of which is being firmware fiddled to 'properly reproduce the full dynamic range of IMAX theatrical soundmixes' that will be provided as a variant of the DTS:X codec with IMAX Enhanced content.

2 BFI's BD slate
The BFI has revealed its slate of Blu-ray/DVD releases for the first three months of 2019. Highlights include brand-new restorations of Jean Cocteau's *Orphée* (January 21) and Merchant Ivory's *Maurice* (February 25); a second Derek Jarman boxset and the return of the BFI Flipside imprint with the 1967 crime film *Stranger in the House* (both February 25); plus Peter Sellers' directorial debut *Mr. Topaze* (March 18).

3 8K TV blasts off in Japan
Japanese broadcaster NHK launched the world's first 8K 'Super-Hi Vision' TV channel at the start of December. While 8K movie content is thin on the ground, NHK managed to bag a new 8K scan of *2001: A Space Odyssey* for the channel's opening weekend and has announced that *My Fair Lady* will be shown in 8K next year.

4 Fancy an Eclipse demo?
Speaker specialist Eclipse has joined forces with retailer Richer Sounds and is installing permanent 5.1 demonstration systems in the latter's Chelsea, Plymouth and Southampton stores. All three outlets also have demo pairs available for stereo listening. Eclipse and Richer Sounds hope to expand the scheme beyond the south in 2019.

5 LG conducts AI orchestra
LG Electronics recently teamed up with the Leeds College of Music to create the first Google Assistant orchestra powered by AI. The musical showcase featured individual recordings of 25 musicians playing various instruments, each streamed to its own designated LG XBOOM AI ThinQ Smart Speaker. The resulting AI orchestra was then voice-controlled by the conductor. Clever.

6 B&O is back in black
Never one to miss the opportunity to refresh an existing product with a lick of paint, Bang & Olufsen has re-released its Beovision Eclipse 4K HDR OLED TV and Beolab 50 speaker in Piano Black. The luxury AV brand has also introduced a sleek new floorstand for the Beovision Eclipse to complement the revised colour scheme.

7 CBS catches up with catch-up
Catch-up and on-demand fare from Horror Channel, CBS Reality, CBS Justice and CBS Drama is being made available for 30 days after broadcast on Freeview Play, courtesy of new Horror Bites and CBS Catchup Channels players. The services are available now on all Freeview Play devices, with the exception of Bang & Olufsen and LG models, which get the update in 2019.

8 'Toon tunes
Fans of the scores of Pixar's films will be thrilled to learn that 'Pixar in Concert' will be visiting Brighton, Manchester, London and Birmingham in 2019. Running April 14-18, the tour features live orchestral performances of music from a host of Pixar favourites, accompanied by excerpts from the films playing on a giant screen.

9 Arrow discs delayed
Production delays have led Arrow Video to push back the release dates for its *Crimson Peak* and *Waterworld* Blu-rays, which will now street on January 14 and 21, respectively. The label's BD outing for Gaspar Noé's arthouse shocker *Climax* has also been bumped to February 11.

10 Whose Who on BD next?
Fans may not be getting a new series of *Doctor Who* in 2019, but they will still be getting plenty of disc releases to keep them going. Not only has BBC Studios confirmed that Tom Baker's last series as the Doctor ('Season 18') will become the third boxset in its *Doctor Who: The Collection* Blu-ray range on February 25, it also revealed that an animated reconstruction of the missing Patrick Troughton story *The Macra Terror* is coming to DVD and Blu-ray on March 18.



Premiere...

What's happening in the world of TV and films...

Keep on Running



A 13-episode *Blade Runner* anime is on the way. Set in the year 2032, *Blade Runner: Black Lotus* will be directed by anime legends Shinji Aramaki and Kenji Kamiyama, and written by Shinichiro Watanabe – who previously scripted the *Black Out 2022* short (pictured), which was included as an extra on the *Blade Runner 2049* Blu-ray.

Want some candy?

Clive Barker's *Candyman* is gearing up to return to the bigscreen in 2020. MGM is teaming up with *Get Out*'s Jordan Peele (who will produce and has co-written the script) on what is being billed as a 'spiritual sequel' to the original.

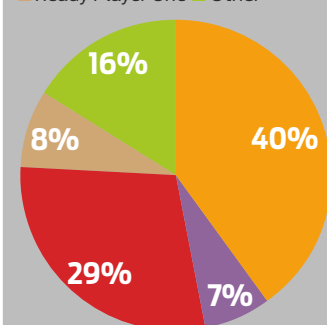
Dredd heads to Didcot

2000AD comic book publisher Rebellion has purchased a large former *Daily Mail* print works in Didcot and will transform it into studio space to house the upcoming *Judge Dredd: Mega-City One* TV series, and the Duncan Jones-directed *Rogue Trooper* movie.

We asked...

Which was the best of 2018's top 10 box office blockbusters?

■ *Avengers: Infinity War*
■ *Black Panther* ■ *M:I – Fallout*
■ *Ready Player One* ■ Other



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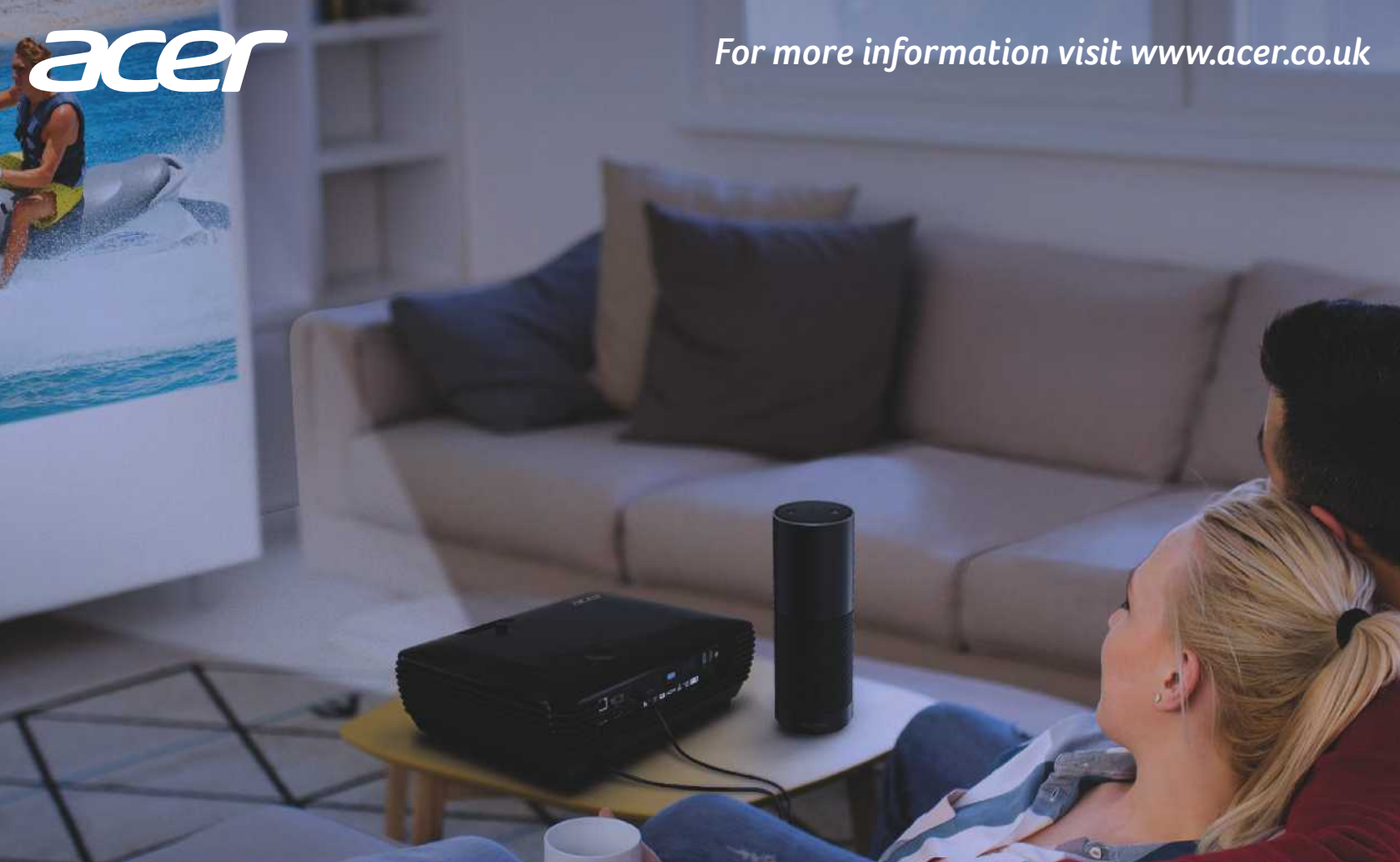
Other titles: *Jurassic World: Fallen Kingdom* (5%), *Ant-Man and the Wasp* (3%), *Incredibles 2* (3%), *Deadpool 2* (2%), *Venom* (2%) and *Operation Red Sea* (1%).

No tricks, this sequel is a treat

Halloween → Universal Pictures → Ultra HD Blu-ray/Blu-ray/DVD

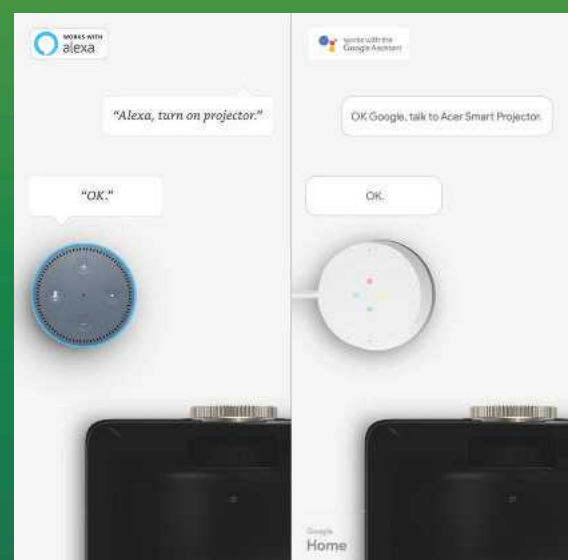
This smash-hit horror sequel ignores the tangled continuity and misguided reboots of the last four decades, instead acting as the definitive successor to John Carpenter's 1978 chiller. Fright fans can spin up the final showdown between masked maniac Michael Myers and nemesis Laurie Strode (Jamie Lee Curtis) in their home cinemas from February 25, when *Halloween* arrives on DVD, BD and 4K Ultra HD, joined by eight deleted/extended scenes and five behind-the-scenes featurettes.





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Face to Face

Topics of discussion on the HCC Facebook page

The launch of the UK's first Dolby Cinema...



400 speakers! Something to aim for during the garage conversion. *Benny Har-Even*

Let's hope they don't charge an arm and a leg, cinema is getting pretty expensive these days. *Eric Redfearn*

Having just read the price scheme, I can say for definite that I will never use this cinema again. Talk about a broken business model. *John Kennedy*

What you're watching on your home cinema...



Over the past three nights I've projected *Once Upon a Time in the West*, *Midnight Cowboy* and *Amadeus*. Cinematic heaven! Sadly, I've let things slide tonight with *Die Hard 2*. The years have not been kind to it...

John Hudson

It's got to be *Mission: Impossible – Fallout* for the second time this week because it's so good! *Chris Bulman*

Universal Soldier had a spin last night. Guilty pleasure. *Jon Deal*



Not exactly an effects-laden film, but Paul Schrader's *First Reformed* is currently top of my pile to watch!

Ben Stoddart

Super Bitch, *Love Me Deadly*, *Don't Open Till Christmas*, *Hunchback of the Morgue* and *Baron Blood*. *Alan Hoare*

Journeyman – Paddy Considine is superb. Then switching my brain off and watching *The Meg*. *Steve Cook*



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Back of the 'net

Trailers, technology and more to check out on the web



Out of the ashes

There's still four long months to go until *Avengers: Endgame* hits UK cinemas and, true to form, Marvel is playing its cards close to its chest. While this first trailer doesn't give too much away, it does tease the return of two familiar faces who sat out *Avengers: Infinity War*, one sporting a brand-new look. youtu.be/hA6hldpSTf8



Sky has Serenity

After B-movie fare including *Final Score* and *The Hurricane Heist*, Sky Cinema's move into simultaneous theatrical/home releasing looks to be stepping up a notch with *Serenity*, a noir thriller starring Matthew McConaughey and Anne Hathaway, and directed by Steven Knight. Debuts March 1. www.serenity.film



Repetitive thrills

Giving the genre a nifty *Groundhog Day*-style spin, horror comedy *Happy Death Day* was one of the year's biggest surprises and we're thrilled to see that a sequel – *Happy Death Day 2U* – will be landing in cinemas on Valentine's Day. Just be warned: this new trailer is packed with huge spoilers for the first film. youtu.be/leXqWDFJZiw



A maverick idea...

Hate motion smoothing on your TV? So does Tom Cruise. The Hollywood legend, accompanied by writer Christopher McQuarrie, took a break from filming *Top Gun 2* to tell his Twitter followers that frame interpolation is killing the visual appeal of film. He even explained how to turn it off. Top guy. <https://tinyurl.com/y92863fg>



TOP PICK

Let them fight!

Directed by Michael Dougherty, next summer's *Godzilla: King of the Monsters* finds Big G warming up for his planned 2020 rumble in the jungle with Kong as he takes on a reimagined trio of iconic kaiju movie monsters: Rodan, Mothra and the three-headed King Ghidorah! youtu.be/KDnKuFtdc7A



Poly puts the Android on

Chord has finally cooked up an Android version of the Gofigure app for its Poly network/streaming player (used with its Mojo DAC), having first debuted an iOS controller earlier in 2018. The app provides configuration via your smart device, and, says Chord, 'simplifies many of Poly's advanced processes.' www.chordelectronics.co.uk

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NEW YEAR, NEW TECH

The consumer electronics industry never stops innovating, so we sent **Steve May** to survey the landscape and pick the technology trends of 2019



Sky to debut HDR UHD

Long anticipated, Sky will finally add HDR to its Sky Q 4K platform in 2019. The satcaster is notoriously tight-lipped about specifics, but we know sister company Sky Italia has been trialling 4K HDR using HLG (Hybrid Log-Gamma) since mid-2018, which will presumably enable the broadcaster to iron out kinks prior to its UK rollout.

So what can we expect? Well, sports and movies look a dead cert. Sky Italia HDR programming has included the UEFA Europa League, Sky original production *Britannia* and home-grown offerings *La Notte Del Maestro* and *Raffaello, il Principe Delle Arti*. It's also added HLG HDR to a number of UHD movies, including *Baby Driver*, *Spider-Man: Homecoming* and *Moonlight*.

Adding to the HDR broadcast momentum, the BBC will continue to experiment with HDR HLG, using iPlayer as its delivery platform. The BBC says it's been mastering HDR to 1,000 nits using Dolby PRM-4200 monitors, a practice we expect Sky to follow.

LG to launch 8K OLED

After a high-profile push at CES 2019, LG is widely expected to ship its first consumer 8K OLED TVs early summer. The company has already shown an 88in pre-production prototype (at the IFA show in September) – more proof of concept than anything else – but actual production runs could see mass development as early as June.

Expect these to be introduced into LG's South Korean market first, before being shipped globally. Don't expect them to sell for peanuts, though, as quantities are almost certainly going to be limited.

We rather suspect LG would probably not launch 8K just yet – LG Display Vice

Sky Q has been 4K-enabled since 2016, but remained SDR – 2019 will usher in HLG HDR content

Chairman Hang Sang has expressed reservations about the lack of native content – but its corporate hand has been forced by rival Samsung, which has already introduced 8K QLED screens.

Move over DV, HDR10+ is coming!

2019 will be make or break for HDR10+, the dynamic metadata rival to Dolby Vision, developed and supported by Samsung, 20th Century Fox, Amazon, Warner, Panasonic and Philips.

Royalty free, you'd expect HDR10+ to have gained rapid support, but progress has been slow. While Amazon is delivering the advanced HDR format as part of its Prime SVOD service, content isn't flagged so there's no way of telling if you're watching HDR10+ on a compatible screen or not.

Workflow tools are readily available for content creators, yet Blu-ray discs with HDR10+ HDR are conspicuous only by their absence.

But we remain optimistic. Hollywood major Fox has repeatedly said it's developing a launch slate, and Panasonic's Blu-ray fleets boasts HDR10+ support. It hasn't added the feature just for laughs.

HDR10+ discs will debut soon, and we'll bet on 8K OLED moving from prototype to reality



Screen sizes to get gigantic

If you think 55in is big, you ain't seen nothing yet. 65in (and larger) TVs are predicted to proliferate in 2019, as low-cost Chinese LCD vendors ramp up production. These jumbo screens will dramatically undercut premium, smaller OLED TVs, which are still being constrained by high demand and relatively low volume (although as Hisense prepares to debut its own OLED, there may be some light at the end of the price tunnel).

A 75in 4K HDR TV for not much more than a grand? Expect that to become the norm over the coming months. Look out for home cinema soundbars getting longer...

Technology finds its voice

According to market research guru Futuresource, over 70 per cent of all TVs now sold are able to receive over-the-top (OTT) streaming content. Smart TVs have become, well, just regular TVs.

What's new isn't so much a connection to the internet but an ability to connect with each other. This opens the door for control and remote monitoring typically via a smartphone, usability which is now being accelerated by the shift to voice assistance. Futuresource says the widespread adoption of voice depends on ease of use, and simpler content discovery.

We're down with that. Hey Google, play something with Jason Statham in it. There, sorted.

Lightning-fast 5G takes flight

Super-fast 5G will transform wireless connectivity and services in 2019, becoming a legitimate alternative to cabled broadband. The technology has huge implications for the UK's broadband infrastructure, and could dramatically improve streaming speeds for video-on-demand providers like Netflix and Amazon.

BT subsidiary EE is currently operating nine 5G trial sites across London, part of the broadband supplier's plan to be the first mobile network to offer the service in 2019. One early lesson learnt was that rooftops need to be strengthened to support 5G aerials, which currently weigh 50kg each.

5G offers higher speed, greater capacity, and lower latency. It's crucial for the development of autonomous cars, but more importantly, has the bandwidth and speed to deliver completely wireless Virtual Reality – so no more being tethered to a PC or games console.

Just how fast is 5G? Well a two-hour movie takes around 26 hours to download using 3G (at 384 Kbps). With 4G at (100 Mbps) that improves to six minutes. But on 5G (at 10 Gbps), you'll be able to download that same film in just 3.6 seconds.

AI to get smarter, says Alexa

You may think Alexa and Google Assistant are know-it-alls now, but we predict a quantum leap in intelligence over the next year. Big advances in AI and machine learning (that's improvements that come from some experience) will improve smart assistant usability, particularly with contextual speech.

'One of the major ground-breakers is going to be our ability to truly converse with artificial intelligence embedded in the fabric around us – this will be far bigger than people realize right now,' says Arvind Krishna, Senior Vice President of Hybrid Cloud and Director of IBM Research.

Beefed-up AI also has ramifications for 8K screens as they come to market. Neural networks open the door for powerful image interpolation. Samsung has pioneered intelligent upscaling, but what we've seen to date could be just the tip of an as-yet-undefined iceberg.

Meanwhile, Intel has developed the Nervana NNP (Neural Network Processor), a purpose-built architecture for deep learning, which promises to introduce a whole new class of AI applications.



EE has already begun trialling 5G in London

We're not smart enough to work out where AI is going, but we're sure it'll tell us when we get there.

VR and AR find a way

IMAX may have closed down its nascent IMAX VR centres, but there's plenty of life left in virtual and augmented reality systems. Lower-cost VR gizmos, like Oculus Go, are beginning to find an audience, and content creators haven't yet given up their dreams of VR storytelling. Broadcasters are also developing applications for AR, with sports coverage seen as fertile ground for development.

3D may be dead, but it's beginning to look like we'll be wearing funny glasses again after all.



Developments in AI promise more realistic speech interaction

Ultra HD Blu-ray to keep growing

Although digital platforms have taken a huge bite out of the physical media market, 4K Blu-ray has enjoyed a solid launch since arriving in 2016, and the year ahead will see further growth – Futuresource expects software sales to reach 20 million units across the US and Europe, up from around 13 million in 2018.

Obviously, the proliferation of 4K HDR TVs and more affordable hardware (look out for 4K decks dipping below the £100 mark in 2019) is good news for the format. Also key to the sales increase, however, is the expanding library. 2018 saw a surge in legacy content being reborn on 4K, a trend that will continue. We may even see James Cameron's *The Abyss* arrive on 4K BD. Or maybe just Blu-ray... ■



Plummeting price points for VR hardware will encourage content creators

Is 2019 the year we stop waiting for *The Abyss* to debut on Blu-ray?



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WHO WINS? TURN THE PAGE...



Batman Ninja: one of Warner's more out-there BD releases



Label of the Year

Winner

WARNER BROS. HOME ENTERTAINMENT

Okay, 2018 wasn't the year that saw Warner unlock its vault and debut the likes of *Gone with the Wind* or *The Wizard of Oz* on Ultra HD Blu-ray, and until those two library classics (and countless more) are given the 4K HDR treatment we'll remain slightly annoyed. On the other hand, a slate that included *Badlands*, *Casablanca* and *The Beast from 20,000 Fathoms* on a new Premium Collection Blu-ray imprint; TV material ranging from *Batman: The Complete Animated Series* to *Westworld: S2*; AV-rich first presses for *Justice League*, *It* and *Ready Player*

One; and 4K resurrections of *The Matrix Trilogy*, *Superman: The Movie* and *2001: A Space Odyssey* were enough to keep us very happy.

Credit is also due to its forward-thinking attitude. Other studios make Atmos tracks a UHD exclusive, but Warner keeps its 1080p discs in the loop. Bravo.

Also nominated

Arrow Video/Academy
BFI
Indicator/Powerhouse Films



2018 saw 4K editions of *2001: A Space Odyssey* and *The Matrix Trilogy*



3D Blu-ray



Winner

STAR WARS: THE LAST JEDI 3D

The 3D Blu-ray format has lost some lustre over the past couple of years but it certainly isn't dead yet (despite what TV manufacturers would like you to believe). Many of the major Hollywood studios continue to support the format with stereoscopic versions of their blockbuster titles – and in the case of Disney's release of *Star Wars: The Last Jedi*, fans have been given one of the most immersive and dynamic

3D experiences this side of *Avatar*. From multiple planes of parallax to subtle volumetric detailing, this MVC encode brings a palpable sense of depth to every shot, all the while retaining the rich colours and inky black levels of its 2D sibling. The Force is strong with this one.

Also nominated

Thor: Ragnarok 3D
Ant-Man and the Wasp 3D



Game



Winner

MARVEL'S SPIDER-MAN

The history of videogames is littered with attempts to make players feel like they're in control of a comic book superhero, yet developer Insomniac Games skilfully sidesteps the pitfalls that many previous efforts fell into with this dazzling PS4-exclusive. From its sensational HDR-enhanced visuals to the slick combat and superior storytelling, *Marvel's Spider-Man* is an absolute blast. The web-slinging mechanics in particular are astonishing – you'll be zipping around the streets of New York City for hours on end.

Also nominated

Red Dead Redemption II
God of War
Shadow of the Tomb Raider



VOD release



Winner

THE HAUNTING OF HILL HOUSE

Viewers of a nervous disposition should make a point to steer clear of Netflix's reimagining of Shirley Jackson's 1959 horror novel. Directed by Mike (Ouja: Origin of Evil) Flanagan, this 10-episode VOD series eschews the subtle chills of the classic 1963 film adaptation in favour of going all-out to scare you witless with its terrifying spooks. *The Haunting of Hill House* also ticks our AV boxes – it looks superb in 4K, and sounds excellent thanks to nerve-shreddingly creepy Dolby Atmos sonics.

Also nominated

Annihilation
GLOW: Season Two
The Purge: Season One



Picture quality



Winner

THE GREATEST SHOWMAN 4K

Roll up! Roll up! This musical about the life of 19th century circus master P.T. Barnum was an unexpected box office smash. Its success on Ultra HD Blu-ray comes as less of a surprise.

Derived from a native 4K digital intermediate based on 3.4K and 6.5K source material, *The Greatest Showman*'s 2.40:1-framed 2160p encode makes the most of HDR10 grading and a wide colour gamut to unleash a dazzling mix of saturated hues and meticulously detailed textures. Together with some deliberately theatrical lighting,

its serves to give director Michael Gracey's bold imagery a tangible sense of depth, even during the busiest song-and-dance numbers.

This is pure eye-candy from start to finish and makes the otherwise impressive 1080p encode seem dull and lifeless by comparison.

Also nominated

2001: A Space Odyssey 4K
Blade Runner 2049 4K
Night of the Living Dead



'Cos every night I lie in bed, the brightest colours fill my head...'



Audio quality

Winner

A QUIET PLACE

A mid-budget movie about staying silent to avoid being killed? On paper it doesn't sound like the obvious home to the year's best soundtrack. And yet, *A Quiet Place's* Dolby Atmos mix (found on both its 4K and 1080p releases) is a powerful and intense affair that's all about dynamic range and creating a three-dimensional soundscape.

Those long stretches of silence that seem to punctuate the film are actually nothing of the sort; they're packed with delicate ambient effects, each perfectly localised in the soundfield. Combined together, they create a wonderfully involving,

fear-heightening sense of space and scale to the locations. And when *A Quiet Place's* beasties do attack, this soundmix (and Marco Beltrami's score) don't hold back. Use of the surround and Atmos channels here is deliciously energetic, while LFE deployment is liberal and room-rattlingly potent. A superb example of movie audio.

Also nominated

Blade Runner 2049 4K

Jurassic World: Fallen Kingdom 4K

Saving Private Ryan: Commemorative 20th Anniversary 4K



Silence is golden where *A Quiet Place's* Dolby Atmos mix is concerned



Demo sequence



Winner

HELICOPTER CHASE (MISSION: IMPOSSIBLE – FALLOUT 4K)

There are many reasons to love the helicopter chase (spin to 01.52.17 on Paramount's disc) that serves as the climax to the latest *Mission: Impossible* sequel, not least the fact it finds leading man Tom Cruise performing more of the insane stunts that have become the franchise's stock-in-trade over the years. And it is also a stunning showcase for your home cinema setup. Captured with IMAX cameras, the 1.90:1

Dolby Vision imagery is so crisp and detailed that it seems you could step into it, and backed up by a phenomenal Atmos mix (also present on the 1080p release) that puts you at the heart of a maelstrom of action. Keep it on standby for system demos...

Also nominated

Dinosaur stampede

(*Jurassic World: Fallen Kingdom* 4K)

Throne room brawl

(*Star Wars: The Last Jedi* 3D)



Visual FX



Winner

PADDINGTON 2

From the *Planet of the Apes* revival to the award-winning *The Shape of Water*, digital characters are a common sight in modern cinema – and one that it's all too easy to take for granted. Straddling a tricky line between photo-realism and animated anthropomorphism, the marmalade sandwich-loving star of *Paddington 2* is a remarkable achievement. Stunning CG modelling and animation (married to Ben Wishaw's vocals) makes Padders feel every bit as real as his human co-stars, and imbues him with genuine pathos.

Also nominated

Blade Runner 2049

Jurassic Park: Fallen Kingdom

Star Wars: The Last Jedi



Extra feature



Winner

THE DIRECTOR AND THE JEDI (STAR WARS: THE LAST JEDI)

Whatever you think of writer/director Rian Johnson's divisive *Star Wars* sequel, this behind-the-scenes documentary is essential viewing. Running for just over 90 minutes, it offers a refreshingly honest look at the making of this major franchise blockbuster and – at its core – the sometimes fractious relationship between the filmmaker and veteran *Star Wars* actor Mark Hamill.

Also nominated

All Eyes on Lenzi (*Eyeball*)

Audio commentary by Sam Deighan and Kat Ellinger (*Images*)

The Typewriter, the Rifle & the Movie Camera: Rushes Tapes 01-12 (*Samuel Fuller at Columbia, 1937-1961*)

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Blu-ray of the Year



Winner

NIGHT OF THE DEMON: LIMITED EDITION

We had long-hoped somebody would give Jacques Tourneur's 1957 horror classic the sort of quality Blu-ray release it deserved. Even so, never in our wildest dreams (or nightmares, come to that) did we imagine something as astonishingly comprehensive as the package Indicator put together for this Limited Edition outing.

Not content with summoning up four different versions of the film (original full-length, US reissue, UK theatrical and US theatrical cuts), the set also provides both 1.66:1 and 1.75:1 aspect ratio options

for two of them. This devilishly good two-disc release then squeezes in copious extras, including an audio commentary, a retrospective *Making of...*, and eight new critical appreciations, with surprisingly little cross-over or repetition between them. Topping it off is a poster and book all housed in a striking slipcase.

Also nominated

Batman: The Complete Animated Series

Casablanca: Premium Collection

Night of the Living Dead



Indicator's luxe Blu-ray package is everything fans hoped for



Blu-ray remaster



Winner

NIGHT OF THE LIVING DEAD

The Criterion Collection Blu-ray release of George A. Romero's legendary 1968 chiller isn't the first time the film has graced hi-def disc in the UK, but it's by far the best. While a copyright snafu had led to *Night of the Living Dead* quickly entering the public domain, allowing two different labels to tackle the film previously on Blu-ray, it seems nobody felt the urge to invest the money needed to restore it to its original glory; the resulting encodes

were either framed incorrectly or had footage missing. Thankfully, for this release the Criterion Collection utilises a brand-new 4K restoration of the 35mm camera negative, and the new 1.37:1 Full HD presentation is nothing less than a revelation, breathing fresh life into the corpse of a genuine horror classic.

Also nominated

Distant Voices, Still Lives

Images

They Shall Not Grow Old



World cinema



Winner

JACKIE CHAN'S PROJECT A & PROJECT A PART II

This Asian action cinema double-header brings together new restorations of two of martial arts superstar Jackie Chan's best-loved movies in one must-own Blu-ray boxset. As well as looking better than ever, the two *Project A* films also sound up for the fight, with a choice of mono and 5.1 tracks in Cantonese and English. Generous extras include newly shot appreciations from genre expert Tony Rayns, an upscale of the alternate 'Export Cut' of the sequel, and various archival goodies.

Also nominated

Blade of the Immortal

Heimat: Limited Edition

Invention for Destruction



Animation



Winner

BATMAN: THE COMPLETE ANIMATED SERIES

It's been a long time coming, but this 12-disc Blu-ray boxset collecting all 109 episodes of the acclaimed '90s Batman cartoon was definitely worth the wait. Beautifully restored from original film elements, the hi-def encodes far surpass the dusty old DVD transfers fans have previously put up with, and superbly showcase the series' distinctive 'Dark Deco' aesthetic. The set is also loaded with quality extras, including two spin-off movies and a 98 minute retrospective *Making of...* documentary.

Also nominated

The Breadwinner

Isle of Dogs

Mary and the Witch's Flower



Ultra HD Blu-ray of the Year



Winner

BLADE RUNNER 2049

Fans of the original worried it couldn't be done, but this astonishing sequel, which sees Denis Villeneuve pick up the directing baton from Ridley Scott, adds a thrilling extra chapter to the *Blade Runner* story while nailing the future noir aesthetic courtesy of best-in-class VFX – and this Ultra HD Blu-ray brings it home with aplomb.

Roger Deakins' award-winning cinematography looks sumptuous, the impactful lighting and colour

choices captured by a faultless 2.40:1 4K HDR encode that crams detail into every frame. Joining these valiant visuals is a Dolby Atmos track of real beauty, with rich LFE notes, articulate ambient effects and soaring Hans Zimmer/Benjamin Wallfisch score begging you to play it loud. Awesome.

Also nominated

2001: A Space Odyssey
The Greatest Showman
Gladiator



Producer Ridley Scott has teased another *Blade Runner* sequel...



TV boxset



Winner

HEIMAT: LIMITED EDITION

Made back in 1984, Edgar Reitz's 15-hour TV drama charting the life of a family from a small German village between 1919 and 1982 looks fresher than ever courtesy of this superb Blu-ray release. Restored from the original camera negatives, the set's 1.66:1 1080i encodes find beauty in the show's mix of black-and-white and colour photography. Worthwhile extras include Reitz's two-part documentary 'prologue', a video essay by Daniel Bird, and a detailed account of the restoration process.

Also nominated

Batman: The Complete Animated Series
Blue Planet II 4K
The Expanse: Season Two



Movie boxset



Winner

FIVE TALL TALES: BUDD BOETTICHER & RANDOLPH SCOTT AT COLUMBIA, 1957-1960

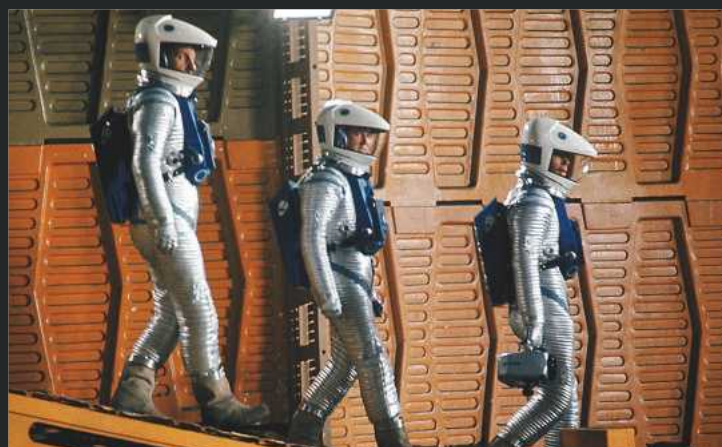
The past 12 months have seen indie Blu-ray label Indicator release a number of A-grade boxsets, every single one of which deserves a spot in your collection. Towering above them all, however, is this celebration of director Budd Boetticher and the Westerns he made with actor Randolph Scott. On top of gorgeous Full HD presentations of five of their films, there are bonus features a-plenty, including chat-tracks, archival interviews, video essays and an 80-page book. A peerless package.

Also nominated

Hammer: Volume Two – Criminal Intent
The Matrix Trilogy 4K
Woodfall: A Revolution in British Cinema



Ultra HD Blu-ray remaster



Winner

2001: A SPACE ODYSSEY

When it was announced that Christopher Nolan, the flagbearer for filmic authenticity, was to oversee an 'unrestored' restoration of Stanley Kubrick's sci-fi milestone, for both a theatrical re-run and Ultra HD Blu-ray release, expectations were high. Yet this platter lives up to the hype.

An 8K scan of Warner Bros.'s pristine 65mm assets leads to a 4K image that features thrilling detail, drawing you into Kubrick's painterly

visuals and exquisite set-design. Colours meanwhile, now claimed to reflect the film's original theatrical look, are bold yet refined and emphasise the director's stylistic approach. Amidst all this, HDR10/Dolby Vision grading is beautifully applied, unearthing subtle highlights and adding a rich depth to the image. By the time Dave is crossing time and space in his escape pod, you'll be hoping Warner can work similar wonders on its other catalogue classics.

This former kitchen now delivers delights for the ears and eyes.

Daniel Sait reports

Cooking up an AV storm



KIT CHECKLIST

EPSON: EH-LS10500 laser projector, 4K enhanced and HDR compatible
SCREEN RESEARCH: 120in 2:40:1 ratio fixed-frame projector screen
ARTCOUSTIC: 3 x Spitfire 4-2s (LCR speakers); 1 x Spitfire Control 2 subwoofer; 2 x Target SLs (surround speakers); 2 x Architect 2-1s (in-ceiling speakers)
INTEGRA: DRX-7 AV receiver, 9 x 140W, Dolby Atmos and DTS:X compatible
PANASONIC: DMP-UB900 4K Blu-ray player
SKY: Q Silver PVR
RTI: System control
RAKO: Smart lighting

THIS PROFESSIONAL PROJECT by South East-based installer Cinema Rooms involved a big transformation as the space designated for cinematic conversion used to be a kitchen, the owner having recently had a new one built in an extension. So out went the fridge, oven and sink and in came an Atmos-compatible audio system and laser-powered projection.

An Epson EH-LS10500, offering HDR playback and 4K upconversion, plus lens memory function for shifting between 16:9 and 2:40.1 ratios, works in tandem with a 120in, 4K-optimised CinemaScope screen from Screen Research, the largest screen possible given the room's dimensions. For speakers, the cinema uses Artcoustic models. 'We took the client to the Artcoustic showroom in Chelmsford to audition speaker options, and specified a 5.1.2 Dolby Atmos system,' says Cinema Rooms' director Simon Gregory. 'We use Artcoustic as our primary brand as the range ticks all the boxes.'

Rounding out the equipment is an Integra DRX-7 AV receiver, Panasonic DMP-UB900 4K Blu-ray player, Sky Q and Sonos connection.

The light touch

Lighting and design touches ensure the room feels far removed from its kitchen origins. To control the main illumination and star ceiling, Cinema Rooms used Rako lighting with DMX and LED module controllers; to make everything work as seamlessly as possible, an RTI system, with an iPad interface, was integrated. 'The family really like the ease of use,' explains Gregory.

Crushed velvet on the walls and chairs, a tidy front-wall AV cabinet and a sweet/snack dispenser finished the space off. The cinema is now in frequent use as a family room for kids' TV, Netflix, sports and movie nights ■

A. Adding some atmosphere

A pair of in-ceiling speakers deliver 3D audio height to top off the 5.1 system

B. Reach for the stars

The Rako-controlled star ceiling is a family favourite, adding a luxury touch

C. Sweet dreams

The room may no longer be a kitchen, but you don't have to trek far to grab an in-movie snack...

D. Cabinet meeting

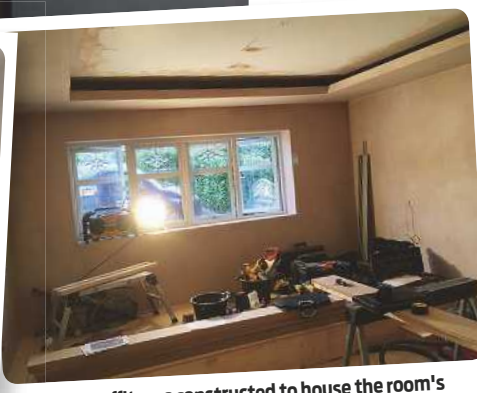
Rather than racking hardware in a separate room, AV furniture was installed below the projector screen, giving easy access

E. You've been framed

With a fixed-frame screen on the owners' wishlist, a 120in 2.40:1 model was chosen to maximise the space available, with the room's LCR speakers mounted behind. The Epson projector's lens memory skill enables automated ratio switching



After the initial planning stage, the installer's first task was to strip out the existing kitchen and prepare the room for its home cinema transformation



A ceiling soffit was constructed to house the room's dramatic LED and star ceiling lighting. An existing window was retained, but fitted with black-out blinds



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 Samsung, JBL, Denon, Dynaudio **PLUS** 4K BD players, subwoofers, media streamers and more!

B&W's super sonics

The 700 Series pilfers driver technology from B&W's top-of-the range 800 Series Diamond speakers to deliver immersive and immense 5.1 audio. We settle in for a listen on p62

HCC RATINGS KEY...

Outstanding	★★★★★
Above average	★★★★☆
Acceptable	★★★☆☆
Disappointing	★★☆☆☆
Dire	★☆☆☆☆

All prices quoted are approximate and may have changed



Denon AVC-X8500H

Richard Stevenson finds 13 reasons to fall in love with this big Denon amp

DENON'S AVC-X8500H HAS taken the AV amplifier concept and turned it up to 11. Well, more than that actually. With a claimed 1,950W spread through its 13 independent channels, plus every key AV feature currently available, this is the undisputed champion of AV spec trumps. But do you need so many channels of power on tap? Yes, as it turns out. While you can divert some of those powered channels to a second or third stereo zone, the real magic is what they can do in your cinema.

Object-based audio formats map sound into your room, making the most of however many speakers you have. The more the merrier. Or, rather, the more speakers, the more accurate the positioning of effects and more believable the ambience of the movie. Dolby Atmos uses up to 128 channels in commercial cinemas, although that might be trickier to pull off in your home theatre.

Starting with a typical 11-channel (7.2.4) setup, this new Denon allows you to add an extra two channels with a number of different placement options. Using them as front height channels for 7.2.6 could have real benefits in bolstering front-end solidity. If you have got a very wide room, you could configure them as front-width channels in a 9.2.4 setup to ensure a spacious front soundstage.

The Denon's options are copious but not endless. Within the initial menu you do have a finite number of speaker configurations to choose from and that could mean some fudging is required. And it is not always obvious how to marry the amp's configuration to your layout. (For instance, at one point I managed to establish a five-channel/surround back/eight height-channel config, which to those with a spare hand for some extra fingers, is 15 channels – it's not until you navigate to the amplifier assignment page that you discover the AVC-X8500H has disabled the SB channels).

Gripe over, though, because outside of the setup malarkey, this Denon is a proper stunner.

When it comes to features, I'll begin with what the AVC-X8500H doesn't have. This is a short list, and it's an AM/FM tuner. As Denon's naming nomenclature testifies, the AVC-X8500H is not an AVR. Denon has taken the decision to oust the FM tuner section completely, so in the strictest sense this is no longer a receiver. We'll gloss over that the amp's internet radio tuner can access thousands of stations, including all your FM favourites. And the fact that the front display window proudly states 'AV Surround Receiver' when you boot it up.

AV INFO

PRODUCT:
13-channel
networked AV
amplifier

POSITION:
Top of the 2018
Denon range

PEERS:
Anthem MRX 1120;
Denon AVR-X6400H;
Pioneer SC-LX901

Back to what it does offer, and the spec sheet runs long. This is a 13.2-channel AV amplifier, armed with Atmos, DTS:X and Auro-3D and able to passthrough 4K HDR. It offers networked streaming, Apple Airplay, HEOS multiroom integration and an 8-in, 3-out HDMI stage. Other connections are gold-plated and comprehensive.

Build quality is fabulous and the Denon looks just as good underneath the hood. In here you'll find 32-bit AKM DACs and a powerful DSP engine based on a pair of SHARC dual-core chipsets. No surprise, then, that the X8500H is a fairly large and heavy beast, and it runs quite toasty warm when pushed, so allow for plenty of ventilation space.

Setup and room EQ is courtesy of Audyssey's MultEQ XT32 FIR-based filter system. More advanced EQ tools can be unlocked if you invest in the Audyssey Editor app.

Other expected touches include IP and RS-232 control for custom installs. There's also the ability to control the X8500H with your TV's remote, and a dedicated Smart Menu onscreen. After a couple of weeks with the amp I also grew to like the Quick Select keys. These tie up sources and their preferred sound modes at the touch of a single button.

Solid as a rock

Yeah, but how does it sound? Quite, quite amazing in fact. This Denon is clean, punchy and dynamic with a solidity to its imaging that makes even two-channel recordings sound wonderfully three-dimensional.

The balance is neutral but lacks nothing in grunt and drive when the volume knob gets turned to the right. That gorgeously crafted power supply, visible through the casework, supplies all those channels with enough juice not to run out of steam when the going gets tough.

Using a 7.2.6 setup with front heights, the Denon mapped Atmos material efficiently onto every speaker. And those front heights really worked well in filling the void above the screen in my fairly long but narrow room.

Doing A/B comparisons with and without the front heights in play is a palaver involving reconfiguring the speaker menu, but is also quite an eye-opener. Largescale panning sequences like the planes going overhead in *Unbroken* (Blu-ray) benefit greatly. The aircraft seem to start further away in the front distance before they get closer, or disappear further into the foreground when heading in the other direction. Dialogue was improved too, the effect reminding me very much of Audyssey's DSX front-height channel implementation. With my centre speaker on a low stand, both systems effectively pull the dialogue upwards, centring voices on the screen.

Moreover, the additional front heights deliver a much greater sensation of three-dimensional sound generally, increasing spatial height well above the listening plane. Even with action-fest movies like *Justice League* (Blu-ray), the effect is noticeable in enlarging the soundstage. The insect-like wings of the Parademons are particularly impressive. Their fast, flighty movement is crafted with amazing precision in the room, and with your eyes closed you can virtually point to a creature's intended location. They also seemed to fly higher than when running the system as simply 7.2.4. In short, I found having extra speakers to fill the void behind and above the main front array mightily useful in my setup.

Thanks to the Denon's processing, mapping more mundane formats to this 13-channel system is equally fun. The AVC-X8500H is a master of upscaling 5.1 into something resembling 3D audio. Switch to the Pavilion

SPECIFICATIONS

DOLBY ATMOS: Yes **DTS:X:** Yes **THX:** No **MULTICHANNEL INPUT:** Yes. 7.1 phono audio inputs **MULTICHANNEL PRE-OUT:** Yes. 15.2-channel **MULTICHANNEL OUTPUT (CLAIMED):** 13 x 150W (into 8 ohms) **MULTIROOM:** Yes. Zone 2 and 3 **AV INPUTS:** 4 x composite; 4 x digital audio (2 x coaxial, 2 x optical) **HDMI:** Yes. 8 x inputs; 3 x outputs **VIDEO UPSCALING:** Yes. To 4K **DIMENSIONS:** 434(w) x 482(d) x 195(h)mm **WEIGHT:** 23.3kg

FEATURES: Audyssey MultEQ XT32 calibration; Auro-3D processing; hi-res audio file playback; Wi-Fi; Ethernet; Bluetooth; Tuneln radio; Apple AirPlay; HEOS multiroom integration; USB input; Audyssey Editor App compatible; Android and iOS app control; Amazon Alexa voice control (via firmware); mono-block power amp construction; compressed audio restorer



2

scene in the DVD of *House of Flying Daggers* – a DD 5.1 mix – and this amp brings it alive with added space and punch right down to the lowest registers of my subs.

Yet it is with Dolby Atmos and DTS:X material that the Denon really shows its mettle as the class-leading AV amp of the moment. Spin anything and it beguiles. The Atmos track on *La La Land* (UHD Blu-ray) is woefully shy when it comes to height information throughout, yet the AVC-X8500H digs into the soundtrack's subtleties and nuances with ease. Dialogue is crisp and articulate; the musical numbers are funky and infectious. Some scenes in particular are so successful at evoking the mellow feeling of an LA jazz club that I almost booked myself a flight out there.

Meet the new boss

After a few weeks it was patently clear that Denon's new model sets the benchmark for integrated AV amplifiers and does so at a relatively affordable price. Try to get this level of functionality anywhere else and you'll face a higher bill and a processor/power amp(s) combo to wrestle with.

It's a brilliant addition to Denon's portfolio, but you have to decide if you really need it. Whether 13 channels are going to work for you significantly better than 11 channels may well depend on the size and shape of your listening environment. For my long, narrow room, adding front height speakers was night and day better ■

1. Pull down the flap to reveal an HDMI input, plus headphone and setup mic sockets

2. As a sign of its complexity, this 13-channel amp offers 15 speaker terminals

HCC VERDICT



Denon AVC-X8500H

→ £2,800 → www.denon.co.uk

WE SAY: Denon's feature-packed 13-channel AV amplifier is complex to set up but delivers the most immersive surround sound yet from a single box.



SPECIFICATIONS

DOLBY ATMOS: Yes **DTS:X:** Yes **THX:** No
MULTICHANNEL INPUT: No **MULTICHANNEL PRE-OUT:** No **MULTICHANNEL OUTPUT (CLAIMED):** 7 x 135W (6 ohms) **MULTIROOM:** Yes, Zone 2 **AV INPUTS:** 2 x digital inputs (1 x optical; 1 x coaxial) **HDMI:** Yes, 6 x inputs; 1 x output **VIDEO UPSCALING:** Yes, To 4K **DIMENSIONS:** 435(w) x 173(d) x 370.5(h)mm **WEIGHT:** 9.6kg

FEATURES: Wi-Fi; Bluetooth; Ethernet; USB; MCACC auto calibration; AM/FM tuner; Pioneer Remote App; Spotify, Tidal and Deezer streaming service integration; Apple AirPlay; 'net radio; hi-res file playback

Pioneer VSX-933

The VSX-933 caters to all your wireless music needs but is a fine home cinema amp too, says **Mark Craven**

The term 'AV receiver' used to denote an amp with a built-in radio tuner. It's even more apt now, with modern AVRs accepting any wireless source you can think of. Pioneer's VSX-933 is a case in point. It may be affordable, but it's blessed with rich functionality.

Wrapping your head around this receiver's audio capabilities takes some time, because Pioneer has adopted a broad brush approach. Most traditionally, the VSX-933 features an onboard FM/AM tuner, plus media file playback via USB or a home network, including 24-bit/192kHz FLAC, WAV and ALAC, plus DSD 5.6MHz. There's also built-in Bluetooth, for streaming from any BT device.

In addition to this, Pioneer handily adds Chromecast Built-in, enabling easy hookup of compatible apps. There's also Apple AirPlay, and a level of integration for those with Sonos Connect hardware. Pioneer's Remote App, meanwhile, introduces Tidal, Deezer and Spotify streaming services. As for multiroom, the VSX-933 supports both the DTS Play-Fi and FlareConnect platforms.

The meat and potatoes of this AV receiver

is, of course, its multichannel movie side. It's a seven-channel design, allowing for 5.1.2 Dolby Atmos/DTS:X setups, straight 7.1, or 5.1 with an additional second zone. Nine speaker terminals provide flexibility for switching between installations.

The receiver looks much like any other

mid-range model, with its symmetrical fascia and central display panel. Yet Pioneer has chosen not to hide its front inputs behind a drop-down flap, instead scattering them left and right. There are USB, mic, headphone and 3.5mm terminals here, but no quick-fire HDMI.

Pioneer's new remote is lightweight in the hand but I'm a fan of the stripped-back design. For too long affordable receivers have been supplied with button-heavy zappers that are too confusing for their target audience.

For calibration, you get the brand's mic-assisted MCACC setup suite. This is a quick process (supporting a single listening positioning measurement), involving ear-bothering test tones.

While an affordable model, the VSX-933 still comes with a moderate level of user control that may or may not appeal – the MCACC EQ results can be altered on a per-speaker level, with up to three personal setups then saved. And in use, the AVR offers easy access to tone control, centre and sub level (useful), Dynamic Range Control for late-night/low-level listening and more.

Multichannel muscle

This AVR shares similarities with affordable Pioneers of yore. It sounds muscular and attacks soundmixes with glee, making up for a lack of high-frequency nuance and insight with a full-blooded approach. Most importantly, it sounds well-oiled, not the least bit sluggish.

The failed terror attack in *Justice League* (Sky Cinema, Dolby Atmos) gives it plenty to do. Danny Elfman's *Batman*-throwback score bounces around the soundfield, perky and playful, while panicked screams echo in the background. When Wonder Woman crashes

through the door, the Pioneer's Direct Energy amps go to the well for this dynamic surge, joined by a delicious crack of wood and one of Hollywood's trademark bass swells. Although you wouldn't want to use this bargain-priced receiver to fill a cavernous cinema room, it has enough for its likely end user.

Lowering the subwoofer level from that set by MCACC gave me a better balance; beyond that I was happy to leave Pioneer's EQ left on. In truth, though, there wasn't a huge difference.

Old-fashioned 5.1 surround sound can still get the juices flowing, as evidenced by this Pioneer chewing on the DTS-HD MA 5.1 *Predator* soundmix (UHD BD). The ambience of the jungle is well-crafted, the alien's idiosyncratic noises resonant in the soundfield and the AVR's robust mid-range delivery works wonders with Alan Silvestri's score.

A minor criticism is the VSX-933 falls short when a scene is quieter and the onscreen visuals call for a delicate approach. It's a receiver that's happier with the bombast and bruising bass of a blockbuster, nailing the drama and excitement of, say, *Fast & Furious 5*'s bank vault drive-away (Blu-ray), while needing a little more airiness and an enveloping approach to convey the naturalistic soundscapes of *The Revenant* (UHD BD).

A word on the VSX-933's menus. The overhauled homescreen is a success; sharply presented, colourful and quick to get to grips with. Yet the onscreen display window, which you'll probably use quite regularly, looks like it's fallen out of a ZX Spectrum.

Still, there's a lot on offer here when it comes to streaming audio, and a cinematic sound performance that is fun if a little unrefined. For the sub-£500 price, the VSX-933 warrants few complaints ■

HCC VERDICT



Pioneer VSX-933

→ £350 → www.pioneer-audiovisual.eu

WE SAY: Thrilling with blockbuster movies and well-specified when it comes to streaming audio, Pioneer's receiver is worthy of consideration.

AV INFO

PRODUCT: Seven-channel Atmos/DTS:X receiver

POSITION: Currently Pioneer's only seven-channel model

PEERS: Denon AVR-X2500H; Yamaha RX-V485



Yamaha CX-A5200

Just how clever is Yamaha's AI-enhanced AV processor?

Steve Withers finds out

YAMAHA HAS BEEN doing multichannel surround and immersive audio longer than just about anyone, pioneering the concept of height speakers before Dolby and DTS got in on the act. However, with nearly every AVR marque offering object audio setups with speakers all over the room, it was time for Yamaha to have a rethink. Enter its CX-A5200, a new 11-channel AV processor boasting Yamaha's latest feature, Surround:AI – a sophisticated learning technology that analyses soundtracks and optimises the surround effect in real time.

AI-enhanced surround sound isn't the only thing different on the CX-A5200 compared to the previous CX-A5100 model. Yamaha has dropped the AM tuner, although there's still FM and now DAB too. Component and composite video outputs have been ditched, but a third HDMI output for a second zone has been added. There's now also a second antenna for a stronger Wi-Fi and Bluetooth signal.

There have been changes on the inside too, with Yamaha adopting upgraded 384kHz/32-bit ESS SABRE Pro DACs, and adding a redesigned power transformer.

The rest of the features are what you'd expect to see on a range-topping AV processor.

There's support for Atmos and DTS:X, and, on the video side of things, the Yamaha can pass 4K/60p at 4:4:4, while the seven HDMI inputs and three outputs are all 2.0b, meaning they can handle HDR including HLG and Dolby Vision.

The CX-A5200 also has Yamaha's MusicCast built-in, delivering a host of music streaming services including Spotify, Tidal, Deezer and Qobuz. It even works with Amazon Alexa for voice control, although setting this up is fiddly and using it is often frustrating.

Living on the Edge

The beach assault repeated throughout the Blu-ray of *Edge of Tomorrow* is easily one of the most dynamic 7.1 mixes around, with explosions emanating from seemingly everywhere and giant helicopters crashing down from above.

The CX-A5200 handled this sonic chaos with ease, placing sounds around the room with accuracy and effortlessly steering effects. Bass performance, after some tweaking of the YPAO EQ, was excellent, with military-grade ordinance shaking the room.

There's a button on the remote called 'AI': press this and you can turn the Surround:AI feature on and off. When you do so, you're informed via the onscreen display, and a little AI logo lights up on the front of the processor.

I'll admit to being dubious about the AI processing at first; we seem to be getting AI with everything these days. However it really works here. The processing seems to draw every tiny detail out of the mix, taking what

SPECIFICATIONS

DOLBY ATMOS: Yes **DTS:X:** Yes **THX:** No
MULTICHANNEL INPUT: Yes. 5.1 phono
MULTICHANNEL PRE-OUT: Yes. 11.2 phono and XLR **MULTIROOM:** Yes. 4 x zones, plus MusicCast **AV INPUTS:** 6 x digital audio (3 x optical; 3 x coaxial) **HDMI:** Yes. 7 x inputs; 3 x outputs **VIDEO UPSCALING:** Yes. To 4K/60p **DIMENSIONS:** 435(w) x 474(d) x 193(h)mm **WEIGHT:** 15.2kg

FEATURES: YPAO calibration; iOS and Android control apps; Surround:AI; Amazon Alexa voice control; DLNA networking; Ethernet; Wi-Fi; Bluetooth; USB; AirPlay; internet radio; Spotify Connect; FM tuner; DAB tuner; HDCP 2.2; 4K 50/60p passthrough; 384kHz/32-bit DACs; Pure Direct mode; DSD, FLAC, WAV and ALAC hi-res support

was already a fairly aggressive sound design and turning it up to eleven.

The effect was quite pronounced on *Edge of Tomorrow*, and even though this was 'only' a 7.1 soundtrack it suddenly felt even more immersive. The effects were defined, the explosions had more impact, and the dialogue was more focused. Purists will criticise such on-the-fly processing, but its more in-your-face nature is probably what most people want when they invest in an AV setup.

With the Atmos mix of *A Quiet Place* (4K Blu-ray), the Yamaha proved it wasn't all about big explosions. With the silent-but-not-silent sound design, the CX-A5200 was able to unravel the subtle audio cues within the mix; it had the gossamer light touch of the best AV processors. Having said that, when it needs to step up a gear, it has the dynamism to make you jump out of your seat. When the monsters attack the house, the sudden shift in volume is quite terrifying, and the bass often seismic. The CX-A5200 shifts from near silence to full volume without missing a beat.

Highly competitive

The CX-A5200 is another great example of Yamaha's multichannel expertise. The AI embellishment feels less like a gimmick and more of a genuine feature that can enhance your enjoyment of surround soundtracks. If you already own the CX-A5100, Surround:AI might not be a compelling reason to upgrade; the predecessor is still a cracking processor. But if you're thinking of going the separates route and building a multichannel system, this is a serious – and well-priced – contender ■

AV INFO

PRODUCT:
11-channel AV processor with Surround:AI

POSITION:
The big daddy of Yamaha's AV lineup

PEERS:
Marantz AV8805; Arcam AV860; Anthem AVM 60

HCC VERDICT



Yamaha CX-A5200

→ £2,600 → uk.yamaha.com

WE SAY: Thanks to some high IQ wizardry this AV processor enhances immersive audio with a soundstage that's expressive and dynamic.

NAD T 777 V3

Ed Selley admires the power and control of this moody-looking seven-channel AV receiver



NAD IS ENTERING the 3D audio premium AVR market with its T 777 V3. As the name suggests, this is the latest revision to the 777 platform, but changes are significant enough that it could have been tagged an all-new model and I wouldn't have felt aggrieved.

At its core, the T 777 V3 is a seven-channel design. These channels can be allocated as 7.1 or 5.1.2. Of course, any pricey AVR limiting its user to just seven channels is going to get some odd looks, so it's no surprise to see the T 777 V3 featuring phono pre-outs for 7.2.4.

Decoding is via six HDMI connections (one on the front panel). All support 4K with HDCP 2.2 and HDR10 and Dolby Vision. There are two HDMI outputs.

Power is rated at 80W per channel which, notionally at least, puts it behind most rivals. Yet NAD's figure is all channels driven into 8 ohms at a low distortion of 0.08% THD.

In reality, the T 777 V3 is probably better endowed than much of the competition.

While NAD's high-end Masters Series amps use Hypex's nCore Class D amplification, the T 777 features a Class AB output stage. A row of cooling fans are fitted to the underside of the

receiver but these have either not kicked in during testing or are impressively silent in use. Indeed, NAD says its fan circuit has a neat trick, cutting out during a quiet scene to stop the sound of gushing air upsetting the ambience.

A big revision to the specification for this V3 model is the removal of Audyssey EQ and the introduction of Dirac Live. Well, sort of. The T 777 V3 comes with Dirac Live LE, which performs analysis between 20Hz-500Hz (where most room nodes are likely to lurk). For an extra \$99, you can upgrade to the full Dirac Live suite and gain correction between 20Hz and 20kHz.

Another noteworthy feature is support for Bluesound's excellent BluOS system (Bluesound and NAD both being brands under the Lenbrook umbrella). BluOS allows for UPnP streaming, 'net radio and access to pretty much any streaming service you can think of. The app also permits input, volume and basic settings tweaks of the T 777 V3. One criticism, however, is that the BluOS module isn't built into the chassis, but is instead on a slightly ungainly looking USB dongle.

Taking everything in its stride

Initially running without any Dirac correction, there are aspects of the T 777 V3's sound that are familiar to the two-channel side of my life. Ask me to find one word to sum up this AVR and it would be 'unflappable.'

This is an exceptionally even-handed and controlled performer. It manages to unpick

SPECIFICATIONS

DOLBY ATMOS: Yes **DTS:X:** Yes **THX:** No
MULTICHANNEL INPUT: Yes. 7.1 phono
MULTICHANNEL PRE-OUT: Yes. 11.2 phono
MULTICHANNEL OUTPUT (CLAIMED): 7 x 80W (into 8 ohms) **MULTIROOM:** Yes. Zone 2, 3 and 4 **AV INPUTS:** 4 x digital audio (2 x optical and 2 x coaxial) **HDMI:** Yes. 6 x inputs; 2 x outputs **VIDEO UPSCALING:** No
DIMENSIONS: 435(w) x 425(d) x 172(h)mm
WEIGHT: 20.5kg

FEATURES: MDC Modular Construction enables future hardware updates; Wi-Fi; Bluetooth; Ethernet; USB input; RS-232; 12V trigger in/out; Dirac Live LE EQ (upgradable to Dirac Live); BluOS integration; HDCP 2.2

even the densest multichannel soundmix without any apparent struggle. Some rivals convey a little more ballistic energy, but they often sound ragged by comparison. In a 5.1.2 Atmos configuration, the T 777 V3 brings effortless control to *Mad Max: Fury Road* (Blu-ray). The detail retrieval it manages as a matter of course is seriously impressive, and thanks to there being pretty much nothing in the way of distortion from the onboard amps, you can wind the levels right up with only the potential rage of your neighbours to contend with. This makes it even easier to enjoy the finer subtleties of the soundtrack, like the outrageous noise that Immortan Joe's Gigahorse makes during the chase through the canyon. And the advantage of the NAD's masterful approach to effects placement is that it is no less effective when viewing things that are not quite as anarchic.

This control and cohesion means that the impact of Dirac isn't as night-and-day as you might expect (although with an 11-channel array with all those extra reflections, it would surely be more noticeable). Running the software helped even out a 40Hz peak in my setup, and a slight dip in the 200Hz region, and further improves the sense of soundstage handling and refinement. Yet an important aspect of Dirac is that applying it doesn't affect the basic character of your speakers or rob them of any of their sense of energy.

Tying up the T 777 V3's apparent desire to be all things to all people, it's no slouch musically. Listening to a hi-res FLAC of David Byrne's *American Utopia* on Qobuz sees it deliver a performance that is light on its feet and wickedly entertaining – this receiver is more musical than its gruff exterior might have you believe ■

HCC VERDICT



NAD T 777 V3

→ £2,500 → nadelectronics.com

WE SAY: Superb sound quality and slick usability should put this premium seven-channel AVR on your radar.

AV INFO

PRODUCT: 7-channel Dirac EQ AVR with 11-channel processing

POSITION: Below NAD's Masters Series, above the T 758 V3 receiver

PEERS: Arcam AVR550; Anthem MRX 720

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M&K Sound S300 THX Series

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Phil Hinton, avforums

- | | | |
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| * Universal | * Skywalker Sound | * Sony Music |
| * Paramount | * Disney | * Lucas Film |
| | * THX | |

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Marantz AV8805

Steve Withers gets to grips with Marantz's multitalented, multichannel AV processor



MARANTZ'S AV8805 IS a technological statement of intent, a 13-channel AV processor boasting just about every feature imaginable. Not only does it support Dolby Atmos and DTS:X, it also handles Auro-3D – making it the only preamp to decode all three immersive audio formats at anything approaching a sensible price.

Some will own the previous AV8802A and wonder if they should upgrade. What's new here beyond the expansion to 13.2 channels? HEOS multiroom, Amazon Alexa voice command support, and eARC ability. Although, if you like having a built-in AM/FM tuner, you might want to keep your AV8802A because Marantz has dropped it here.

The processor has a minimalist design with almost no controls actually visible. There's just an input selector, volume dial and circular display. The fascia is hewn from a solid piece of aluminium.

The rear view is more daunting, with a bewildering number of inputs and outputs. There's actually a total of seventeen outputs using a choice of either phono or balanced XLR. It can only decode a total of thirteen channels at any one time, but the extra outputs allow for different speaker

configurations. AV connections include eight HDMI inputs and three HDMI outputs, all v2.0b.

On the multimedia side, there's built-in Wi-Fi and Bluetooth, plus Ethernet, and support for Apple's AirPlay and Spotify Connect, along with HEOS multiroom.

Audyssey MultEQ XT32 EQ is reasonably effective but lacks the sophistication of Dirac Live, which is used by Arcam and Emotiva, or Trinnov's bespoke EQ. I'd recommend assigning levels manually and setting the individual crossovers for each speaker.

Scaling new heights

The AV8805 can upscale soundtracks to 7.2.4, so I started with the 4K BD of *Dunkirk*, a go-to 5.1 disc. The Marantz delivered the action scenes with wonderful aggression, taking full advantage of the headroom in my amplification to deliver a dynamic experience. It opened up the soundstage in a way that felt totally organic, sounding like an Atmos mix, even though I knew it wasn't.

The scream of the Stuka bombers terrifies, and the subsequent explosions add plenty of well-integrated bass impact. There was also a subtlety to the processing, with the sounds of wind and surf on the beaches rendered with a pleasing sense of realism.

On to an actual Atmos track. *Gravity* (Blu-ray) has a highly directional object-based mix that's a test for effects steering and tonal balance. Dialogue often slips around the room in a 360-degree soundfield, and the AV8805 did a wonderful job of moving the voices and

SPECIFICATIONS

DOLBY ATMOS: Yes **DTS:X:** Yes **THX:** No
MULTICHANNEL INPUT: Yes. 7.1 phono inputs
MULTICHANNEL PRE-OUT: Yes. 15.2 phono and XLR **MULTIROOM:** Yes. 2 x zones **AV INPUTS:** 4 x digital audio (2 x optical, 2 x coaxial)
HDMI: Yes. 8 x inputs; 3 x outputs **VIDEO UPSCALING:** Yes **DIMENSIONS:** 440(w) x 410(d) x 185(h)mm **WEIGHT:** 13.7kg

FEATURES: Audyssey MultEQ XT32; Auro-3D; ISF certification; iOS and Android apps; HEOS multiroom; Alexa voice control; DLNA networking; Ethernet; Wi-Fi; Bluetooth; USB; AirPlay; internet radio; Spotify Connect; eARC; HDCP 2.2; HDR10; HLG; Dolby Vision; 192kHz/32-bit DACs; Pure Direct mode; DSD, FLAC, WAV and ALAC

effects from speaker to speaker, creating a three-dimensional soundstage around my seating position. And during the almost soundless scenes in space, its ability to subtly feed my dual woofers was key to the drama.

Of course we don't always want our bass to be subtle, so next up was *Blade Runner 2049* (Ultra HD BD) with its foundation-shaking Atmos mix. The AV8805 conjured a bass performance that was smooth and even, yet powerful. It also added impact but never smothered everything else, which is exactly what bass should do.

Once again, the precision in terms of effects localisation and steering was impressive, with spinners flying overhead and height channels being used to craft a crushing sense of claustrophobia when the action moves to street level.

With *Jurassic World* (Ultra HD BD) the outdoor scenes found the Marantz able to form a huge soundstage with enough depth, width and height to contain the film's palaeontological stars. When the Indominus Rex attacks the Asset Containment Team, there's gunfire, explosions and deafening roars, and impressive use of dynamic range. However, within this sonic cacophony, specific effects are deliberately given more weight. It's a great in-a-nutshell sequence that proves this processor's poise and power.

As updates go, the AV8805 makes sense. The AV8802A was never under-endowed, but this aims higher (literally) with its additional channels and HEOS integration. It's a superb pre-amp, combining audiophile components with state-of-the-art processing. It sounds incredible with movies, and is equally adept with music ■

AV INFO

PRODUCT: 13.2-channel object-audio processor

POSITION: Flagship AV processor in Marantz lineup

PEERS: Arcam AV860; Emotiva RMC-1; Trinnov Altitude16

HCC VERDICT



Marantz AV8805

→ £3,600 → www.marantz.co.uk

WE SAY: Marantz puts the audiophile into home cinema with a state-of-the-art 13.2-channel preamplifier loaded with features.



SPECIFICATIONS

DOLBY ATMOS: Yes **DTS:X:** Yes **THX:** No
MULTICHANNEL INPUT: No **MULTICHANNEL PRE-OUT:** Yes. 11.2 phono **MULTICHANNEL OUTPUT (CLAIMED):** 9 x 125W (into 8 ohms, 20Hz-20kHz, 0.05% THD) **MULTIROOM:** Yes. Three zones **AV INPUTS:** 3 x composite; 4 x digital audio (2 x optical and 2 x coaxial) **HDMI:** Yes. 8 x inputs; 3 x outputs **VIDEO UPSCALING:** Yes. To 4K **DIMENSIONS:** 434(w) x 389(d) x 236(h)mm **WEIGHT:** 13.7kg

FEATURES: HEOS multiroom; Amazon Alexa voice compatibility; Audyssey MultEQ XT32 room calibration; eARC; ALAC, FLAC, WAV up to 24-bit/192kHz; DSD 2.8MHz/5.6MHz; Ethernet; Wi-Fi; Bluetooth; USB input; Apple AirPlay 2; Tunes radio; Spotify Connect, Tidal and Deezer; Compressed Audio Restorer

Denon AVR-X4500H

This AV receiver is the best reason to upgrade your home theatre yet, says **Steve May**

WHEN IT COMES to orcs, they don't get more impressive than Durotan, chieftain of the Frostwolf Clan. As wide as a rhino, with tusks that would make a walrus wince, he's power personified. Denon's AVR-X4500H is similarly impressive. Two hours into Duncan Jones' *Warcraft* movie, I was beginning to bruise from its effortless slam. Thank goodness I didn't choose *Creed* for this evaluation.

Denon's nine-channel Atmos AVR not only has the might to do justice to warring orcs, but it offers an impressive roster of functionality, connectivity and codec support (including IMAX Enhanced after a firmware update due in February). If you've been reluctant to upgrade your home theatre, the AVR-X4500H could finally be the carrot to make you capitulate.

There's certainly no shortage of connectivity here – the rear panel has more ingress than Tokyo station. There are seven HDMI inputs, all 4K/HDCP 2.2 compliant, plus three outputs, two for screen and projector, the third for a Zone 2 feed. All HDMI inputs support 4K at 60fps, with 4:4:4 colour sub-sampling, Dolby Vision and HLG HDR support.

Out of the box, the receiver is capable of

an immersive audio layout of 7.1.2 or 5.1.4, but there's 11.2-channel processing available if you have the room, speakers, amplification and inclination to take advantage of it. All channels utilise a 32-bit AKM AK4458VN DAC, with a so-called 'velvet sound' architecture.

The receiver's headline power rating is 9 x 200W, but this is a 6 ohm measurement into a single channel with 1% THD. A more reasonable starting point is Denon's 125W (8 ohm/0.05% THD/two-channel) figure. Suffice to say, this monster can get rowdy.

Slick setup

AVRs can be ornery, but Denon has made an art of setup. A graphical assistant guides you through the process, including room EQ, in this case Audyssey MultEQ XT32 calibration. I took full advantage of all the toys, measuring eight positions, and using the internal subwoofer matching mode to ensure a balanced LFE output of my two active subs.

This top-flight Audyssey iteration is more precise than lesser versions, and does a generally excellent job. The balance achieved between deep bass, punchy mid-range and sparkling detail was immediately apparent. A familiar barrage of Dolby Atmos test clips, used to quickly confirm the system was indeed working the way it should, sounded imperious and determined. That painstaking sub-bass matching rewards with an LFE that impacts like a Saturn V lift-off, and the power plant in

this receiver is quite something. It pressure-loads a room without even raising a sweat. Sonic steerage is also sensational, as *Warcraft* (Blu-ray) continually attested.

When the orcs first attack (Chapter 4), burly weapon-wielders break in from every corner. An axe cleaves the front soundstage and deep bass rumbles believably. Then a magical blast sends one attacker flying from the front stage, through the trees above my head and into the far right corner of the room. My home cinema was under siege.

Of course, great movie sound isn't just about carnage and rumble. It's equally about ambience and subtlety. In the aftermath of the orc battle, flies buzz around carcasses, their travels realistically pirouetting above and behind the listening position with perfect spatial positioning. This is immersive audio done spectacularly well.

Multichannel music is intoxicating too. Emerson, Lake & Palmer's *Toccata (Brain Salad Surgery)* (DVD-Audio) is a frenetic experience, with Carl Palmer's percussion conducting hit and run attacks from every corner. The AVR delineates these assaults with crisp precision; Denon AV receivers have in the past had a reputation for warmth, which can sometimes translate into a cloying cloak at volume. That's not the case here.

Audio file compliance covers ALAC, FLAC and WAV to 24-bit/192kHz, plus DSD to 5.6MHz. There's no native support for MQA though, which is about the only negative point I can muster in this review. The AVR-X4500H has more ticks than boxes; it's an orc-some AVR that pound for pound can't be beaten ■

AV INFO

PRODUCT: Nine-channel Atmos AV receiver

POSITION: Above the-seven channel AVR-X3500H

PEERS: Yamaha RX-A3080; Onkyo TX-RZ830

HCC VERDICT

★★★★★

Denon AVR-X4500H

→ £1,500 → www.denon.co.uk

WE SAY: An immersive audio behemoth, and a top-flight music machine too. And if IMAX Enhanced takes off, you'll be ahead of the curve.

IOTAVX AVXP1

Steve Withers finds out if this new seven-channel Class AB power amplifier makes an iota of difference in his cinema room



IF THE NAME IOTA isn't familiar to you, then you're not alone. To be honest, I'd never heard of the company before this seven-channel power amplifier arrived at my door. A bit of digging later, I discovered it's a British electronics brand, based in Middlesbrough, focused on the design and construction of stereo and home cinema hardware.

It combines its engineers and technicians with 'efficient production' and a streamlined sales infrastructure (you can buy directly from the manufacturer), to offer well-made and competitively priced products. The range currently includes speakers, a seven-channel AV processor, and the AVXP1 seven-channel power amp reviewed here.

The price seems right

If IOTA's goal is to deliver unbeatable price/performance, then it's off to a good start as far as this multichannel amp is concerned. £1,050 is reasonable for seven channels of solid grunt.

The company hasn't skimped on the build quality either, with the kind of weapons-grade construction (it weighs in at 30.3kg) that I like to see in a higher-end product.

As you'd expect from a power amp there's a simplicity to its design, with a minimalist

metal construction and a matt-black finish. Aside from the company's name, the only thing on the front is a power switch. This glows red when off, white when on, and if there's a problem it blinks.

There's a bit more going on around the

back, with seven sets of phono and balanced XLR inputs. Between each of the two types of connection is a little selection switch that you flick, depending on which one you're using.

In addition there are good-quality binding posts, a 12V trigger, and a 3.5mm jack for synchronising the amp's front light with IOTA's AVX1 AV processor.

The spec sheet is brief but impressive, with the Class AB amplification claiming power figures of 7 x 110W (8 ohm) and 7 x 170W (4 ohm) – stepping up to 150W (8 ohm) and 250W (4 ohm) when driving two-channel systems. If IOTA is to be believed, and its numbers appear realistic, that's a serious amount of aural potential.

For the purposes of this review, I fed the IOTA from Yamaha's CX-A5200 AV processor (see p37) in a seven-channel setup. This is the most likely configuration but even if you don't have an AV processor, this powerful amp offers other possibilities. For those with an AVR with seven-channel pre-outs, the AVXP1 provides the opportunity to take full advantage of your existing processing, while beefing up the amplification at the same time. To test this out I also paired the AVXP1 with an Arcam AVR850, essentially using the latter as a processor.

Soon after firing up the CX-A5200/AVXP1 combo I realised IOTA's claimed power numbers are based on real-world performance, rather than simply driving the amp to destruction and using the measurement taken right before it blew up. It also had no problems driving 4 ohm speakers.

I loved the sense of space and scale that it imparted to the epic soundscapes of Suede's new album *The Blue Hour*. There was a simple reason for this: headroom. The amp

SPECIFICATIONS

POWER OUTPUT (CLAIMED): 7 x 110W (8 ohm, all channels driven, 0.06% THD)

CONNECTIONS: 7 x phono inputs; 7 x balanced XLR inputs; 7 x speaker terminals; 12V trigger

DIMENSIONS: 431(w) x 480(d) x 19.8(h)mm

WEIGHT: 30.3kg

FEATURES: High-output toroidal transformer; Class AB output; binding posts accept 4mm banana plugs/heavy-gauge speaker cables; dimmer port

had power to spare, conveying transient peaks and remain totally unfazed even when I turned the volume up to Glasto levels.

With movie soundtracks, where the channels are often used simultaneously to create a more immersive experience, a power amp will prove its worth. A good example is *The House of Flying Daggers* (Blu-ray) and its justifiably famous drum sequence. As small stones hit drums positioned in a 360-degree soundfield, the amplification needs to be both tight and responsive, keeping pace with the action as sounds bounce from drum to drum, and thus from one channel to another. The Yamaha/IOTA pairing delivered this with wonderful timing, rendering effects with clarity and producing a gutsy sense of impact.

Interstellar (UHD BD) boasts another dynamic mix, particularly when the protagonists try to escape the pull of a black hole. With this setup it sounded as though the entire room was being torn apart by extreme gravitational forces; the AVXP1 was able to maintain power to all the speakers evenly, with an immediacy to dramatic shifts in volume.

Switching to the Arcam AVR850 revealed that despite its relatively inexpensive nature, the AVXP1 is able to complement even the best processing. Watching *Unstoppable* on Blu-ray, this particular pairing handled the aggressive sonics of this runaway train movie with a massive dynamic range that was both precise and responsive. The Arcam's own Class G power revealed improved transparency when compared to the IOTA, thus retaining a better sense of reality. Yet the AVXP1 gave an excellent account of itself and the greater efficiency of Class AB obviously makes it more affordable.

So whether your system includes an AV processor or receiver, IOTA's AVXP1 could elevate its performance without breaking the bank. An unflashy but effective upgrade path ■

AV INFO

Seven-channel power amplifier

POSITION: Currently IOTA's only power amp separate

PEERS: Emotiva XPA-7; Marantz MM8077; NAD M27

HCC VERDICT

★★★★★

IOTAVX AVXP1

→ £1,050 → www.iotaenterprises.co.uk

WE SAY: If you have a decent multichannel AV processor or receiver, this power amp could elevate your system's performance.

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Philips 65OLED+903

Philips' newest OLED flatscreen beguiles **John Archer** with its Bowers & Wilkins-powered soundbar – as well as its 4K visuals

PHILIPS' 65OLED+903 SEES the brand teaming up with UK sound experts Bowers & Wilkins. The idea is that the latter's sonic knowhow, combined with Philips' picture quality prowess, results in a TV that's a genuine all-rounder, and one that delivers a cinematic experience. The partnership has certainly got off to a good start, with the OLED+903 scooping the 'Home Theatre TV' prize in this year's EISA Awards.

The set also bagged an IF Design Award earlier this year. The bodywork is gorgeous – an ultra-slim, metal-finished frame perched on a pair of narrow feet that become almost invisible when you're viewing the TV head on. More visual appeal comes from Ambilight, whereby coloured light emerges from the TV's top, left and right edges, and can match the hue, intensity and location of colours in the images onscreen. It has the joint benefit of both looking cool and putting less strain on your eyes during dark-room viewing, but I'd recommend turning the feature's brightness down a few notches.

Tucked between the screen and those minimalist feet is the OLED+903's full-width built-in soundbar, the first fruit of Philips' relationship with B&W. This presents a 2.1-channel configuration, with a trio of rear-mounted bass

drivers (two passive, one active) joined by left/right channels combining titanium dome tweeters with glass fibre cone midrange drivers. As well as these new materials, B&W's involvement has introduced stiffer enclosures for the HF/MF units to reduce resonance; isolation of the drivers; and new motor systems.

In action, the soundbar yields outstanding results. The immense dynamics of *Deadpool 2*'s soundmix (Ultra HD Blu-ray) surprised me; bass is deep, rich and expands to handle the increase in sound scale that always accompanies the arrival of Juggernaut, while blending excellently with the lower mid-range and never feeling overblown. The front-firing design ensures there's a direct sound to all non-bass effects; dialogue is unusually clear and defined. Treble effects are pristine and well placed rather than harsh or lo-fi. The mid-range sounds clean, dynamic and expansive, and the audio boasts a helpful height element to it as well as a good sense of width.

The star attraction

Great though its sound is, it's still the TV's visuals that steal the show. Refinements made to Philips' P5 picture engine work with the strengths of OLED technology to good effect.

AV INFO

PRODUCT:
65in 4K OLED with Ambilight, HDR10+ and Android smarts

POSITION:
Philips' premium 65in display

PEERS:
LG OLED65C8;
Panasonic
TX-65FZ802

The P5 system deals with key picture elements – colour, contrast, source optimisation, motion and sharpness – on a single chip, in an order designed to get the finest results. The processing feature with the best name – and which has the most jaw-dropping impact – is the 'sparkle and darkle' effect. Somehow this manages to achieve brightness peaks during HDR viewing that are far more dazzling than I've witnessed with other OLED TVs. Running *Deadpool 2* in 4K HDR simultaneously on the 65OLED+903 and an LG OLED77C8, the extra intensity in the brightest parts of explosions, reflections on metal, and other small, ultra-bright objects, is remarkable. HDR has never looked so HDR on an OLED display. Awesome.

Interestingly, measuring the TV's brightness with a 10 per cent white HDR window settles down to a figure of around 790 nits. However, the Philips momentarily hits

'Combines OLED's contrast strengths with an HDR-friendly brightness punch... this is in a league of its own'

above 900 nits during initial measurement, providing a potential insight into how the brand's apparent 'overdriving' technology works.

Small areas of peak HDR light aren't badly 'clipped' either, still containing subtle tone and light differentiation.

The 'darkle' part of 'sparkle and darkle' finds black levels looking even better on the 65OLED+903 than they usually do on an OLED TV. This is because while the darkest parts of the picture consistently look perfectly black, they also hold remarkable amounts of subtle detail.

For instance, in *Harry Potter And The Deathly Hallows Part II* (Ultra HD BD), the deep black of Snape's outfit during his meeting with Voldemort in the boat house is gorgeously intensely. Yet there's fine detailing that makes his figure look three-dimensional, and none of the hollowed-out look witnessed on screens that struggle with 'just above black' image content.

The average brightness level with full-screen HDR content is also impressively punchy, meaning it's not only the little details that catch the eye, and that HDR pictures remain watchable in a well-lit room.

The P5 processor's standard dynamic range-to-HDR upscaling is also noteworthy. The resulting image has more of a contrast hit than SDR, and this extra light and colour dynamism is added without it looking forced or unnatural. I did find it helped assigning the core contrast setting to Normal in this instance, though, rather than the brighter Best For Picture setting that's preferable for most 4K sources.

Philips processing claims to convert colours to 17-bit 'resolution', to remove banding and deliver more colour tones. *Deadpool's* weathered red suit appears more vibrant, yet also more refined and textured, while the walls of the X-Men mansion are clean and smoothly blended rather than banded and blocky. The brightness boost Philips has conjured up with the 65OLED+903 also gives colours an appealing intensity and sense of volume.

New algorithms generally keep skin tones looking natural even though other tones look enjoyably dialled up. There's still room for improvement here, though, as the occasional tone, usually during bright exteriors, can

SPECIFICATIONS

3D: No **4K:** Yes. 3,840 x 2,160 **HDR:** Yes. HDR10; HDR10+; HLG **TUNER:** Yes. Freeview HD; satellite **CONNECTIONS:** 4 x HDMI inputs; 3 x USB; Ethernet port; optical digital audio output; stereo audio input; headphone output **SOUND (CLAIMED):** 50W, 2.1-channel **BRIGHTNESS (CLAIMED):** N/A **CONTRAST RATIO (CLAIMED):** N/A **DIMENSIONS (OFF STAND):** 1448.7(w) x 876.5(h) x 50.3(d)mm **WEIGHT (OFF STAND):** 31.1kg

FEATURES: Built-in Wi-Fi; USB multimedia playback; P5 processing engine; Android N smart system (Oreo upgrade expected early 2019); Quad Core processing; B&W soundbar; Ultra Resolution; Perfect Natural Reality

seem a touch sun-tanned. But generally the combined richness and precision of the 65OLED+903's colours are hard to resist.

The P5 hits continue with motion processing. The various tools Philips provides for removing judder and blur are much more flexible than they used to be, making it easier to find a setting that suits your tastes. *Deadpool 2's* super-fast blade fights were handled without generating significant side effects such as haloing or flickering.

The set can also be cajoled into unleashing astonishing sharpness and detail. *Deadpool 2* isn't the crispest 4K Blu-ray around, but running it on the 65OLED+903 feels like you're looking at a whole different resolution of TV. A sharper disc, such as *Mad Max: Fury Road*, simply confirms this impression. You can make out more detail in the film's battered cars and desert backdrops, yet it feels entirely real and clean.

Other likeable things about the TV are that you can watch it from any angle without the picture breaking down; its new 'magic wand' stick remote is beautifully designed and fun to use; and it delivers around 22ms of input lag in its Game picture preset. It also runs the Android TV smart interface/platform more solidly, stably and slickly than Sony's TVs. Nor does the processing power needed to run Android seem to cause slow downs in the TV's setup menus.

While the upscaling of HD is usually outstanding, if your source is particularly grainy – such as *Harry Potter And The Deathly Hallows Part 2* on Blu-ray – this grain can become noticeably exaggerated, regardless of whether you stick with Philips' Ultra Resolution option or not. I even saw occasional white sparklies and ringing around grain points. Philips' noise reduction processing on its medium or high setting largely removes this noise, but can leave grain looking a bit artificial – like watching the image through a net curtain.

Pushing the 4K experience

Unlike its main rival – Panasonic's FZ952 – the focus of Philips 65OLED+903 is less on 'director's intent' and more about pushing the 4K and HDR experience to sharper, brighter extremes. If you want to combine OLED's contrast strengths with more of LCD's HDR-friendly brightness punch, this TV is currently in a league of its own. And it sounds superb ■

1. The OLED+903 uses Philips' latest P5 processing engine

HCC VERDICT

★★★★★

Philips 65OLED+903

→ £3,500 → www.philips.co.uk

WE SAY: Top-class processing unlocks every last drop of OLED's current potential, ensuring that HDR 4K sources have never looked punchier or crisper on an OLED screen.

Samsung QE85Q900R



Samsung has delivered the first 8K TV – **John Archer** ignores the price tag and focuses on what it can do to his Ultra HD Blu-ray collection

THE EARLY BUZZ around 8K TVs has been somewhat negative. 'Who needs 8K when 4K content is still barely a thing?' has been the cry. Well I've got news for all the naysayers, having spent time with Samsung's QE85Q900R: 8K TV is absolutely brilliant.

This cutting-edge display makes an impact thanks to a mammoth 85in screen. The format's 33 million pixels will always have more impact on a bigger canvas, so it's probably no surprise that Samsung has kicked off its 8K campaign in such king-sized style, although there are also 75in and 65in variants.

The size of this TV will, of course, limit the QE85Q900R's appeal. As will its £15,000 asking price.

The TV ships with an external One Connect box, offering four HDMI ports, three USBs, and Bluetooth and wired/wireless

network connections. There is a catch with the HDMI, though: none are built to the HDMI 2.1 standard and can't convey 8K at more than 30 frames a second. Samsung is, however, working on a new One Connect box that will carry an HDMI 2.1 port. This is slated to ship with Q900R TVs at some point in

2019, and will be made available to people who've previously bought a Q900R without the HDMI 2.1 input.

It turns out that the QE85Q900R is not only a picture quality flagbearer because of its next-gen resolution. This set also hits brightness levels not witnessed before on any consumer television. I measured near 4,800 nits in its Dynamic mode (although this drops to around 2,500 with the Movie preset).

While Dolby Vision remains unsupported, Samsung has developed a new Quantum 8K processing engine for its latest TV, which includes arguably the 85Q900R's most important feature: an 8K AI upscaler. This draws on a built-in (and updatable via firmware) image database to calculate how to insert the tens of millions of extra pixels required to map 4K and lower-res content to the screen's native 7,640 x 4,320 resolution. And it works better than I'd imagined possible.

With 4K sources this upscaling is pretty much flawless. It makes images look significantly more detailed and crisp without colour errors, or typical upscaling side effects such as double-edging. Even the faint traces of jaggedness around curved edges you can get with 4K TVs are essentially completely blitzed by the tiny 8K pixels.

Even more impressively, the TV's upscaler can handle HD and SD sources well enough to make them look better, rather than the messy horror shows I'd expected.

SPECIFICATIONS

3D: No **4K:** Yes. 8K – 7,640 x 4,320 resolution
HDR: Yes. HLG; HDR10; HDR10+ **TUNER:** Yes. Freeview HD; satellite HD **CONNECTIONS:** 4 x HDMI inputs (currently 2.0, but one with 2.1 support will feature on One Connect boxes next year); 3 x USB; Ethernet; RF input
SOUND (CLAIMED): 60W **BRIGHTNESS (CLAIMED):** 4,000 nits **CONTRAST RATIO (CLAIMED):** N/A **DIMENSIONS (OFF STAND):** 1,905.2(w) x 1,094.2(h) x 35.2(d)mm
WEIGHT (OFF STAND): 56.1kg

FEATURES: Built-in Wi-Fi; multimedia playback; Quantum processor 8K; 8K AI upscaling; QLED technology; Eden 2.0 smart platform; direct LED array with local dimming; Bluetooth headphone output

Native 8K content is almost nonexistent right now. Anyone who buys a Q900R will be almost completely using it to watch 'regular' sources. Samsung itself could only provide around six minutes of native 8K footage for review purposes. Yet this proved more than enough to establish that genuine 8K looks nothing short of sensational. The amount of detail, clarity, depth and colour resolution present goes far, far beyond anything I've seen with even the best 4K experience. These advantages are visible from a reasonable/typical viewing distance of 4m-5m.

All those pixels are backed up here by a squad of excellent supporting features. Contrast, for instance, is immense; the set uses a direct LED lighting system with 480 zones of local dimming to ensure its searing brightness is partnered with impressive black levels. Despite its size and brightness, it can produce peak HDR picture elements against a near-black backdrop with no trace of backlight clouding or blooming at all. The 85Q900R seems even better in this respect than Samsung's Q9FN 4K range. And with 4,000-nit masters such as *It* and *Mad Max: Fury Road* on 4K Blu-ray, the TV copes uniquely well, presenting copious detail in the image's brightest areas.

A higher base brightness level allows you to see more shadow detail in dark areas. This lends HDR images a more balanced and three-dimensional feel – and extremely impressive colour volumes.

Overall, this megascreen takes TV picture quality to resolution (and dynamic) places it hasn't gone before, whether you're watching the native 8K sources of tomorrow or the lower-resolution sources of today ■

AV INFO

PRODUCT: 85in direct-lit QLED TV with local dimming and 8K resolution

POSITION: Samsung's flagship flatscreen for 2018

PEERS: Samsung 75Q9FN; Sony KD-75ZD9

HCC VERDICT



Samsung QE85Q900R

→ £15,000 → www.samsung.com/uk

WE SAY: The 85Q900R doesn't just rely on its pixels or native 8K content to create a stunning spectacle. Expensive, but also reference-grade.



Sony KD-55XF9005

Sony's well-priced LCD screen barely puts a mid-range foot wrong, enthuses **Steve May**

IT'S ALL ABOUT the backlight. You can have the smartest image processor in the showroom, but if your backlight isn't up to snuff then that shiny new LCD panel just isn't going to impress. This is one very good reason why AV enthusiasts adore full array LED systems – even the cleverest edge-lighting tends to betray itself sooner or later with light pooling and splotchy artefacts.

Unfortunately, direct-lit LED TVs aren't particularly common, not least because the majority of consumers equate thinness with quality, and those extra lamps add girth to a set. It matters not a jot on the high street that a direct LED-backlit TV will typically do a better job presenting HDR highlights and deeper blacks.

Thankfully, Sony continues to offer enthusiasts the option. Last year's XE9005 was a critical hit, which this year gives way to the XF9005. The good news is this update introduces a number of significant improvements over its predecessor.

For one thing, that critical backlight has been boosted for better contrast, and the set's image processor has been upgraded to X1 Extreme. It also heralds a new motion handling technique called X-Motion Clarity.

Black beauty

The value of the TV's full array backlight is immediately noticeable. Screen tonality is smooth and black backdrops largely uniform. There are none of the murky grey puddles witnessed on low-quality edge LED displays.

An X-tended Dynamic Range PRO adjustment allows the set to turn up and lower the backlight for accuracy (I opted to leave it on Medium), but there is a limit to the precision of its backlight dimming. The XF9005 doesn't have anywhere near the same number of LED clusters as found on flagship designs, so there is some blooming around bright objects on dark backgrounds (particularly noticeable when you view off-axis). For the most part, however, images are even.

A key attribute of the X1 Extreme processor is image clarity. The panel exhibits full-fat 4K detail in all viewing modes. A dual database is on hand to aid noise reduction accuracy and fine detail presentation. And as a Triluminos wide colour gamut set, the XF9005 packs a delicious, rich colour punch.

SPECIFICATIONS

3D: No **4K:** Yes. 3,840 x 2,160
HDR: Yes. HDR10; HLG; Dolby Vision
TUNER: Yes. Freeview HD; satellite
CONNECTIONS: 4 x HDMI inputs; 3 x USB; Ethernet; optical digital audio output; AV input; headphone output **SOUND (CLAIMED):** 2 x 10W **BRIGHTNESS (CLAIMED):** N/A **CONTRAST RATIO (CLAIMED):** N/A **DIMENSIONS (OFF STAND):** 1,228(w) x 706(h) x 69(d)mm **WEIGHT (OFF STAND):** 18.2kg

FEATURES: Built-in Wi-Fi; Bluetooth headphone support; Android TV with Chromecast built-in; 4K X-Reality PRO with dual database processing, X-tended Dynamic Range PRO; X-Motion Clarity; object-based HDR Remaster

Of the TV's presets, Vivid mode is a surprise. Forget your preconceptions: this improves clarity and nuance, and enhances colour depth. The first act of *Okja*, in HDR on Netflix, with its dappled forest scenery, finds the XF9005 unleashing tremendous detail. In Vivid mode, that Super Pig looks extra tasty.

HDR performance is impressive. I measured just over 1,000 nits with a 5 per cent window, dropping to around 750 nits with a 10 per cent window. Even a full-field SDR screen is delivered at over 380 nits, which is exceptionally bright. This inherent vibrancy wows on *Transformers: The Last Knight* (4K BD), where the glinting robots and frequent explosions look spectacular. Meanwhile, Sony's Object-Based HDR Remaster, a non-negotiable image enhancement (unless you stick to True Cinema), does a consistently good job improving the dynamics of regular HD and SDR 4K.

The much touted X-Motion Clarity innovation, which selectively boosts LED brightness depending on the image to counter the dimming of black frame insertion, works well. Motion handling across the board (the Motionflow menu provides various flavours) is generally excellent.

Where the XF9005 does under-deliver is image lag. I measured this at 95.8ms in Standard mode, and it only dropped to 39.3ms in the dedicated gaming mode, which remains relatively poor.

However, while it's lagging behind rivals (pun intended) when it comes to gaming, the rest of the XF9005's feature set is strong. Solid 4K HDR imagery, excellent SDR upscaling, trendy design and admirable motion handling are all reasons to shortlist ■

AV INFO

PRODUCT: Direct-lit 4K HDR LED TV with Android smarts

POSITION: Mid-range, below Sony's OLED and LED flagships

PEERS: Panasonic 55FX750; LG 55SK9500

HCC VERDICT



Sony KD-55XF9005

→ £1,200 → www.sony.co.uk

WE SAY: First-class image processing, dynamic HDR and a smooth direct LED backlight make this mid-range 4K LED TV a must-see.

HOME CINEMA
Choice
BEST BUY



Panasonic's connections with the filmmaking world have yielded stunning results, reckons **John Archer**

Panasonic TX-65FZ802

WE'RE USED TO TV brands stating their aim is to deliver images that look as close as possible to how their creators intended – but none have been as vocal as Panasonic. This ambition has been boosted by some studios using its OLED displays as their largescreen mastering monitors. Buy the 65FZ802 TV I'm looking at here, in other words, and you could end up watching your content on more or less the same display that it was actually created on. And you can't get much more accurate than that.

So does this TV live up to its performance promise? Absolutely. Feed it a source (4K if you can) and you get to see more of those infinite subtleties of colour, contrast and detail that video masters agonise over than you do on arguably any other TV released to date.

During the shots on the command deck of S.H.I.E.L.D.'s 'flying aircraft carrier' in the new 4K Blu-ray of *Avengers Assemble*, for instance, details in the dark corners of the room, which tend to be crushed out of the picture with other displays, are readily apparent.

The same is true during the night-time fight between Thor, Captain America and Iron Man. While many TVs show this scrap appearing against a backdrop of almost solid blackness, on the 65FZ802 you can pick out background info that gives the image a much more authentic look, plus better depth and scale. And as the Avengers fight their climactic battle across New York, this Panasonic reveals subtleties of detail in their costumes, and the greys and browns of the city's architecture.

Credit for this naturalistic colour-handling lies with Panasonic's revised HCX picture processor, which, we're told, has been refined after consultation with the Hollywood filmmaking community. There's a gorgeous balance and natural toning to the FZ802's colour palette. Skin tones, in particular, stand out from the crowd courtesy of minute tonal

SPECIFICATIONS

3D: No **4K:** Yes, 3,840 x 2,160 **HDR:** Yes. HDR10; HDR10+; HLG **TUNER:** Yes. Freeview HD; Freesat HD **CONNECTIONS:** 4 x HDMI; 3 x USB; SD card slot; component video input; headphone jack; Ethernet; optical digital audio output **SOUND (CLAIMED):** 40W **BRIGHTNESS (CLAIMED):** N/A **CONTRAST RATIO (CLAIMED):** 'Ultimate' **DIMENSIONS (OFF STAND):** 1,449(w) x 837(h) x 62(d)mm **WEIGHT (OFF STAND):** 28kg

FEATURES: Built-in Wi-Fi; Bluetooth; DLNA; USB multimedia playback; SD card multimedia playback; HCX processing engine; THX certification; Ultra Bright panel with Absolute Black filter; ISF mode; Panasonic TV Remote App

shifts – the range of colours the TV can express is also a sight to behold.

The potent processing here helps engineer exquisite black levels, too. OLED is rightly lauded versus LCD TV tech for its ability to deliver deep black tones, but the 65FZ802 goes beyond this by delivering more natural 'light gradations' and near-black finesse than I'm accustomed to seeing from OLED.

Brighter than before

My main complaint about Panasonic's previous OLED models was that they weren't very bright. However, on the 65FZ802 I measured a 785-nit luminance on a 10 per cent HDR window. This isn't quite as much as some rivals, and has an impact on colour vibrancy, but still a big improvement on Panasonic's part. And there's no denying the FZ802 captures the beautiful dynamics of the *Avengers* movie's new HDR grade.

The set's light and colour control never leaves you in a moment's doubt that you're looking at a native 4K display. This is especially apparent, of course, when you're watching a native 4K source, although it's also very accomplished at upscaling HD material.

With SDR sources this Panasonic looks impeccable, and turns out to be an engaging gaming monitor, too. I measured input lag at just 15ms with the Game preset – which is about as low as a premium TV is going to get.

A point to consider is the 65FZ802's lack of support for Dolby Atmos and Dolby Vision HDR – both embraced by competitor OLED models from Sony and LG. This may seem an odd omission from a TV designed to deliver on the content creators' intent – but needn't be a deal-breaker ■

HCC VERDICT

★★★★★

Panasonic TX-65FZ802

→ £2,800 → www.panasonic.co.uk

WE SAY: There are punchier OLED performers out there, but the 65FZ802's finesse and accuracy makes it a real home cinema dream machine.

**HOME
CINEMA**
Choice
BEST BUY



Samsung QE65Q9FN

John Archer is reminded that OLED isn't the only premium TV technology in town

SAMSUNG PROBABLY THOUGHT when it unveiled its QLED displays in 2017 that they'd take the world by storm. Surely punters would be unable to resist the brightness and colour range delivered by the brand's new metal-clad Quantum Dots? But things didn't turn out that way. Instead, rival OLED sets, bolstered by performance tweaks and wider availability, became the year's 'must-have' item.

Samsung doesn't seem to have liked this very much, because it's responded with the QE65Q9FN, a 65in flagship that emphatically addresses the chief issue that hindered the QLED charge last year: backlighting. All of the brand's TVs in 2017 featured edge LED arrays, but this model uses more precise direct lighting with local dimming.

Samsung doesn't specify the number of individually controllable zones, but I estimate it around 400-500. It has also implemented a new processing technique that gradually reduces the intensity of a dimming zone's light as it approaches its edges, which should also make defined clouds of light around very bright objects less obvious.

There have been improvements to the company's proprietary metal-clad QLED Quantum Dots, too, resulting in a claimed increase in colour purity and range – a full 100 per cent of the DCI-P3 colour space, in fact.

These upgrades are delivered while retaining two unique strengths of previous QLEDs: extreme brightness and remarkable anti-reflection filtering. This screen can hit peaks on a 10 per cent white HDR window of 2,400 nits. The screen filter, meanwhile, soaks up ambient light and reflections with real efficiency. There's probably no other TV around that's as watchable in a bright room.

More effort has been made to include broadcast TV in the set's content browsing, searching and recommendations utilities, while the onboard Freeview HD tuner is joined by support for the UK's main broadcast catch-up TV apps, as well as 4K and HDR versions of Amazon, Netflix and YouTube.

Possibly this screen's only feature flaw is a lack of support for Dolby Vision HDR.

Direct appeal

Does the switch to direct lighting with local dimming transform Samsung's QLED fortunes? You'd better believe it – this set's black levels are leagues ahead of those of any 2017 QLED model. The QE65Q9FN delivers black colours that give OLED a run for its money, even with mixed images where

SPECIFICATIONS

3D: No **4K:** Yes. 3,840 x 2,160 **HDR:** Yes. HDR10; HDR10+; HLG **TUNER:** Yes. Freeview HD; satellite HD **CONNECTIONS:** 4 x HDMI inputs; 3 x USB; RF input; Ethernet; AV input; optical audio output **SOUND (CLAIMED):** 40W **BRIGHTNESS (CLAIMED):** 2,000 nits **CONTRAST RATIO (CLAIMED):** N/A **DIMENSIONS (OFF STAND):** 1,405(w) x 830(h) x 39(d)mm **WEIGHT (OFF STAND):** 26.7kg

FEATURES: USB multimedia playback and recording; Q Processing engine; Smart Things smart home support; Eden 2.0 smart system; voice recognition and control; Ambient Mode for low-powered screen saver; direct lighting with hundreds of dimming zones; QLED technology; 4K HDR VOD apps; One Connect box

inky blackness is shattered by luminance peaks. This means the final scrap between the assembled heroes and Steppenwolf in the 4K BD of *Justice League* looks nothing short of mindblowing; a tapestry of intense HDR whites and colours, and rich blacks. There's barely a hint of backlight blooming either. The screen's peak luminance and canny processing also ensure intense details – such as the lights in Bruce Wayne's jet – look real rather than clipped and hollow.

When it comes to colour, tones across the board are fantastically vibrant, benefitting from the colour 'volume' on tap. But they're stable and balanced too, as opposed to simply pushed, and the screen displays the smallest tonal shift or subtle blend. This raises the feeling of innate sharpness and detail of 4K content, and it handles HDR colour blends – even the difficult-to-manage white clouds around the aliens in *Arrival* (Ultra HD Blu-ray) – without any sign of distracting striping interference.

Rounding out this TV's picture charms are a slightly expanded viewing angle (but by no means the best around), precise and controlled standard dynamic range playback, and an improved version of Samsung's HDR+ system, which converts SDR material to something approaching HDR.

Motion processing is a slight weakness, and very occasionally parts of an image can flicker, as if the TV is struggling to decide which backlighting setup to use. On the other hand, the onboard speaker system is surprisingly potent.

With the QE65Q9FN, Samsung has reminded us how good LED TVs can be ■

AV INFO

PRODUCT:
65in 4K QLED TV
with HDR10+

POSITION:
Samsung's top-of-
the-range 4K TV

PEERS:
Sony KD-65ZF9;
LG OLED65E8;
Sony KD-65AF9

HCC VERDICT

★★★★★

Samsung QE65Q9FN

→ £2,800 → www.samsung.com/uk

WE SAY: Unprecedented colour and brightness combine with the LED world's best backlight controls to deliver astonishing HDR images.



VPL-VW270ES / VPL-VW570ES /
VPL-VW870ES

Sony 4K Certified Showrooms

Audio Affair

Birmingham | 0121 224 7300

Audio T Ltd

Southampton | 01442 872 200

AV Integration/1 source

Hertfordshire | 023 802 52827

B and O Newcastle

Newcastle | 0191 230 5551

Clarke Infinity

Billerica | 01277 624 444

Grahams HiFi

London | 0207 226 5500

Hi Fi Corner

Edinburgh | 0131 557 1873

HiFi Cinema

Reading | 0118 982 0402

Hifi Lounge Ltd

Bedfordshire | 01767 448 121

Infidelity

Surrey | 0208 943 3530

Kalibrate

Surrey | 07947 007 644

London Home Cinema

London | 0208 370 1820

Loud and Clear

Glasgow | 0141 221 0221

Martins HiFi

Norwich | 01603 627 010

Niche Audio Visual

Manchester | 01565 648 219

PJ HiFi

Guildford | 01483 304 756

Projector Point

Kingston upon Thames | 0208 614 4113

Rayleigh HiFi

Southend | 01702 435 255

Revolve CI

Weston Supermare | 01934 823 864

Richer Sounds

London | 0333 900 0093

Robert Taussig

London | 0207 487 3455

Sevenoaks Sound and Vision

Kent | 01732 775 632

Sound Gallery

High Wycombe | 01494 531 682

Soundcraft Ltd

Kent | 01233 624 441

Soundstage

Hertfordshire | 01992 440 549

SSAV Bristol

Bristol | 0117 974 3727

SSAV Reading

Reading | 0118 947 7093

Stone Audio

Poole | 01202 630 066

TV and Video Direct

Bolton | 01204 395 999

Wall of Sound

York | 01904 704 107

SONY 4K Home Cinema Projectors for 2019

VPL-VW870ES

Our newest laser projector features the latest 4K processor for home cinema projectors, plus Reality Creation technology to analyse and upscale content so you get the best from your library. New Digital Focus Optimiser technology further enables complete clarity and focus.



VPL-VW760ES

Move up to uncompromising true 4K image quality and pro-style features. The VPL-VW760ES raises the bar for the serious home cinema enthusiasts who demand nothing but the best in refined performance and elegant styling.



VPL-VW570ES

Delivering the same, incredible native 4K resolution, the VPL-VW570ES is ideal for home cinema enthusiasts. A smaller optical engine and compact design allows flexible installation in your movie room.



VPL-VW270ES

The sophisticated styling of this projector blends into any living room. Enjoy movies and streaming services in true 4K HDR clarity, with support for the latest picture standards and easy integration into the most ambitious home entertainment set-up.



VPL-VW5000ES

The world's most advanced home cinema projector combines an advanced laser light source with the same Sony 4K SXRD panel technology that's found in our professional cinema projectors, so it's an unforgettable experience, whatever you're watching.



VPL-VZ1000ES

We have combined the best of our projector technologies: 4K, laser light source and ultra-short-throw capabilities into our VPL-VZ1000ES. Designed perfectly for home cinema use in any home theatre or living room space for the best experience possible.





Philips 43PUS6753

This low-cost 6 Series 4K screen is feature-stacked. Even the smart platform impresses, enthuses **Steve May**

AS WELL AS clashing bezels with rivals in the high-end OLED TV arena, Philips is developing a stranglehold on the budget 4K TV market. Sure, there's tempting competition from the likes of Hisense, Toshiba and others, but if you want a killer deal when it comes to small(er) 4K screens, then Philips' 6 Series should be top of any shortlist.

The 43PUS6753 is the latest in that lauded low-cost line. A 4K HDR TV, it combines potent panel technology with a surprisingly adept new smart platform, all for £400. Want bigger? The range includes 50in and 55in versions.

The TV hides its budget build well. Its thin grey plastic frame is supported by an open metal stand, which adds a little premium flash. It's not super-slim, but it's hardly bulky either. The rear panel is edged in Ambilight LED bulbs.

Smart functionality is forward-facing. The screen has a Freeview Play tuner, so TV catchup is catered for via a seven-day roll-back EPG guide.

Obviously the 43PUS6753 is 'net-connected, but the set doesn't use an Android TV OS system like its more expensive stablemates. Instead it runs Philips' new stripped-back Linux-based SAPHI system – and the big

surprise is that it's actually rather good. There's no app bloat, for one thing, and it does pretty much everything you need a connected screen to do. Streaming services include Netflix, Amazon, Rakuten TV and UK catch-up hubs. Navigation around all this is intuitive.

Visually enticing

Images have visual snap and healthy colours, with plenty of clarity. The panel is capable of a supremely sharp 2,160p image, although viewing distance could be an issue with such a (relatively) small display. There's an irrefutable link between perceived resolution and viewing distance, which is why screen makers advocate we sit closer to a 4K TV than an HD one.

As a budget model, the 43PUS6753 doesn't feature Philips' advanced P5 image engine, but there's still a lot going on behind the scenes, including a Micro Dimming system for its direct LED array. That said, the TV's cut-back image processing chops do become noticeable when it comes to motion. All of Philips' presets here generate some level of artefacting, with the exception of the Movie mode. When it comes to the Natural Motion tool, your best option is to leave it set to medium.

Switching between presets via the settings menu is painless – you can toggle them without needing to delve deep into menus. All prove quite engaging with SDR.

With HDR content, the choices are HDR Personal, HDR Vivid, HDR Natural, HDR Movie and HDR Game. These are more divisive,

SPECIFICATIONS

3D: No **4K:** Yes, 3,840 x 2,160 **HDR:** Yes, HDR10; HLG **TUNER:** Yes, Freeview HD; satellite **CONNECTIONS:** 3 x HDMI inputs; 2 x USB ports; component AV; optical digital audio output; headphone jack; RF input; Ethernet **SOUND (CLAIMED):** 20W **BRIGHTNESS (CLAIMED):** N/A **CONTRAST RATIO (CLAIMED):** N/A **DIMENSIONS (OFF STAND):** 971(w) x 573(h) x 77(d)mm **WEIGHT (OFF STAND):** 8.7kg

FEATURES: Ambilight; compatible with Philips Hue; built-in Wi-Fi; USB multimedia playback; Freeview Play; SAPHI smart system; Miracast; Pixel Precise Ultra HD processing; Ultra Resolution upscaling; Micro Dimming Pro; HDR Plus

as choosing between them can significantly affect image quality. HDR Movie is relatively dull, and makes fine detail difficult to distinguish. HDR Natural, which ramps up image dynamism, is a preferable option.

Watch the opening text crawl on the 4K Blu-ray of *Star Wars: The Last Jedi* in HDR Movie and the number of visible stars plummets. Viewed in any other mode, the starfield returns. Root around the menus and you'll find HDR Plus, which can be used to provide additional lift.

As a Philips TV, the 43PUS6753 naturally comes with no shortage of other image parameters to play with. Resolution, gamma and noise reduction adjustments may sound tempting, but be aware that a panel of this class doesn't easily reward manual tweaking.

Regards HDR, this lower-tier telly doesn't sparkle with specular highlights, as it simply doesn't have the inherent brightness to deliver a truly high dynamic range. It does a better job than many rival sets in the same price bracket, however. I measured peak luminance around 350 nits, bright enough to not dim the panel down to unacceptable levels and convey the glow during sunrise over Luke Skywalker's island hideaway in *...The Last Jedi*. It also helps that backlight uniformity is good, and black levels reassuringly deep.

With regular SDR content, be it HD or SDR 4K, the TV is consistently bright and punchy. Indeed, I'd rate this a fine screen for hi-def sources, be they from tuner, set-top box or media streamer.

Overall, this is an excellent mix of image quality and feature functionality, bolstered by the brilliance of Ambilight. It should attract bargain hunters like bees to honey ■

HCC VERDICT



Philips 43PUS6753

→ £400 → www.philips.co.uk

WE SAY: Nothing beats this 4K HDR high-street hero for sheer value. You can go bigger for the same money, but not better.

AV INFO

PRODUCT: 43in 4K HDR LED TV with Ambilight

POSITION: Ranks below the Android-powered 7 Series and Philips' OLED models

PEERS: Hisense H43A6250; Samsung 40MU6120

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Powerful new processing boosts the picture quality of LG's already impressive OLED TVs, says **John Archer**

LG OLED65E8

A COMBINATION OF gorgeous designs, a five-strong range targeting different buyers, and picture quality improvements saw LG's OLED models make huge inroads into the mid-range/premium TV market last year. But with LCD/LED technology fighting back through direct-lit contenders from Sony and Samsung, the pressure is on LG to keep moving OLED forwards. Which is what it's done with the OLED65E8, an upper mid-range 65in display.

From the outset, this TV looks radically different to its E6 and E7 predecessors. The chunky, integrated soundbar of those earlier

models has been replaced by a sleeky see-through glass sliver, with front-firing speaker now relegated to a small black 'band' between the screen and the new glass neck. Built-in Dolby Atmos decoding still features, but audio quality here does take a step back due to the revamped design.

New on the inside is LG's Alpha 9 processor, which works well to tidy up most of the 'rough edges' that cropped up on occasion when viewing LG's E8 models. For instance, there's now hardly any sign of the strange vertical banding sometimes witnessed with mid-dark or detailed dark scenes on the E7. The early cockpit sequence in *American Made* (UHD BD) here looks almost clean, rather than as if it's appearing through chunky prison bars. A potentially tricky dark scene in a church in the 4K Blu-ray of *Saving Private Ryan* also looks even and natural.

Improvements are detectable in the way the OLED65E8 handles complex areas of HDR colour. The blended shades and hues of *Mad Max: Fury Road*'s skies (UHD Blu-ray) exhibit little noise, while the toning of the leaden skies and grey, bombed-out buildings during *Saving Private Ryan*'s final act is unblighted. It's also noticeable that this 2018 model suffers less with blocking noise in the very darkest parts of its pictures than the E7 did. This is particularly true if you stick with the E8's Standard HDR image preset.

LG's 'bug fixing' continues with the TV's motion handling. Pans across the cemetery in *Saving Private Ryan* still look a bit billowy

SPECIFICATIONS

3D: No **4K:** Yes. 3,840 x 2,160 **HDR:** Yes. HDR10; Dolby Vision; HLG **TUNER:** Yes. Freeview HD; satellite **CONNECTIONS:** 4 x HDMI inputs; 3 x USB; RF input; satellite input; Ethernet; headphone output; optical digital audio output **SOUND (CLAIMED):** 60W, 4.2-channel **BRIGHTNESS (CLAIMED):** N/A **CONTRAST RATIO (CLAIMED):** N/A **DIMENSIONS (OFF STAND):** 1,449(w) x 903(h) x 52(d)mm **WEIGHT (OFF STAND):** 26.6kg

FEATURES: USB/network multimedia playback; Alpha 9 processor; WebOS/ThinQ/AI smart platform; voice control (incl. Google Assistant and Alexa support); HDR Effect; Dynamic Tone Mapping; Quad Step noise reduction; Dolby Atmos decoding

without LG's TruMotion processing in play, and there's a little shimmering around the edges of moving objects if you do activate it. Yet the extent of this digital intrusion is less than I've seen before with LG sets, and the custom tools are present to help you strike a nice balance between reducing judder and keeping noise to a minimum.

I've saved the best of the OLED65E8's picture quality improvements until last. A new Dynamic Tone Mapping system analyses incoming HDR10 signals and attempts to add to them the sort of scene-by-scene metadata present in the Dolby Vision format (which is also on the menu here).

Powered by that Alpha 9 processor, this Dynamic Tone Mapping feature gives HDR10 content (the majority of 4K Blu-rays) more punch than before. It raises the average brightness level of *Saving Private Ryan*'s daylight sequences to levels where at times – provided the image isn't almost uniformly bright – they seem to match the intensity of more luminous LCD models.

This significantly brighter approach is achieved without compromising the black levels for which OLED has long been adored. So, for instance, when the troops in *Saving Private Ryan* walk along a ridge at night, the sky lights up with lightning that looks more intense than you might have expected, but the blackness of the surrounding sky is every bit as rich as you'd hope it would be.

Other positive traits are a superior viewing angle, a sub-20ms input lag in HDR Game mode, an expansive smart system with improved voice control, and a wealth of calibration options, making this an appealing all-round premium package ■

AV INFO

PRODUCT: 65in 4K HDR OLED TV with integrated Dolby Atmos audio

POSITION: In the middle of LG's current TV range, above the C8 series

PEERS: Samsung QE65Q9FN; Sony KD-65AF8

HCC VERDICT



LG OLED65E8

→ £3,000 → www.lg.com/uk

WE SAY: New processing addresses minor niggles of previous range and boosts HDR imagery. Slim design doesn't benefit sound quality, though.

M&K Sound IW150

Steve Withers spends quality time with some high-performance cinema speakers



IF YOU BROWSE your dictionary for the word iconic, you'll probably see a picture of the M&K Sound S150 next to the definition. The company has had its up and downs – co-founder Ken Kreisel has departed – but the S150 has been a professional studio monitor of choice for decades.

Since its introduction in 1995, the speaker has been installed in film and music recording studios the world over, and it may well have been involved in the mixing of some of your favourite movies and songs. M&K Sound has recently released the larger S300, essentially moving the S150 down to a mid-range position; but that doesn't detract from what remains a world-class speaker.

So if the S150 has been around for so long, what's new from the company? A new approach to installation.

Now you see me...

The original speaker uses a traditional box cabinet, which is designed to be positioned on stands or a convenient shelf. The IW150, as indicated by the prefix, is an in-wall version of the S150.

The appeal of in-wall speakers is undeniable; as soon as you can't see the source of the sound it becomes easier for the listener to be immersed in the experience. This is especially true when it comes to movies. And for some rooms going in-wall is the only acceptable aesthetic option.

The problem with in-wall speakers is that, as the name suggests, you have to physically put them in the wall, which requires a custom installer, a gifted amateur, or the help of a friendly builder. The other problem is that by removing the speaker from its cabinet and sticking it in a wall, you might change its sonic integrity.

Disclosure: I didn't start digging out my cinema in order to audition the IW150s. Thankfully I didn't need to because the speaker uses a sealed enclosure; I was able to place them right up against the wall on speaker stands. This will have had some effect on their overall signature, but shouldn't have adversely impacted the performance.

The setup reviewed here is composed of three IW150s for front left, right and centre (£1,200 each), a pair of S150T tripoles for the surrounds (£1,750), and the X12 subwoofer

AV INFO

PRODUCT:
High-end in-wall/
on-wall 5.1 speaker
package

POSITION:
In-wall iteration of
the S150 speakers,
below the IW300
and S300

PEERS:
Artcoustic
Spitfire 8-4;
ATC HTS40

(£3,200). It's worth pointing out that neither the S150Ts nor the X12 are either in-wall or new, but M&K Sound deems them the perfect partners for its latest invention. If you had enough space, you could use the IW150 for every channel. But the S150T's proprietary tripole configuration is specifically designed for smaller rooms, where surround speakers are often much closer to the listener.

The also-THX-certified X12 is a beast of a subwoofer, and uses a pair of 12in woofers (in a push-pull config) in a sealed black-satin enclosure. The driver array is designed to deliver a total surface area equivalent to a single 18in unit. In other words it should be more than capable of enhancing the bass performance of the smaller passive speakers.

From the front, the IW150 looks exactly like the S150: it has the classic M&K Sound driver layout of three vertically aligned 1in soft fabric dome tweeters down its left-hand side, and a pair of 5.25in polypropylene woofers ranged down the right. The speakers come with white magnetic grilles that can be painted whatever colour the wall is, blending them in with the overall decor.

Utterly transparent

As soon as I started listening to the IW150s, I could tell that M&K Sound had achieved the goal of retaining what makes its speakers so special, while also significantly reducing the size of the enclosure. The front three models perfectly match each other in terms of tonality, but are also utterly transparent when it comes to their delivery.

That's what you'd expect from a speaker with a studio monitor heritage, but the fact the IW150s can do this given their slender dimensions is nothing short of a revelation.

Although they're fairly sensitive, they appreciate being driven with a bit of power, and an Arcam AVR850 was more than happy to oblige. Pushed into action, the IW150s are effortlessly capable of a pleasingly open sound that fills the room. There's detail and clarity here, and a sense that you're hearing exactly what the sound designer or mixer wants you to. The high-end is perfectly rendered, while mid-tones are also well represented, resulting in an excellent performance across the majority of the frequency range.

Despite the difference between them in cabinet design, the IW150s seem a perfect match for the S150Ts. As a result, the system delivers a 360-degree soundstage, allowing for steered effects that remain tonally balanced as they move from speaker to speaker.

If I had one criticism of the IW150, it's that it's slightly lacking at the low-end, although to a certain extent that's the point. These are satellite speakers (they just don't look like much of the satellite competition) and are designed to be used in a system that's augmented by a subwoofer. The bold-looking X12 does this in spades, with a massive bass presence that ably delivers lower frequencies until it crosses over with the IW150s at 80Hz. It's a top-to-bottom performance that sounds seamless in its integration, built upon a sub-sonic floor that's evenly distributed.

Dunkirk (4K Blu-ray) has an exceptional DTS-HD MA 5.1 soundtrack, and I was looking forward to hearing what the M&K Sounds could do with it. This quintet didn't disappoint, delivering the subtly layered mix with an incredible detail that creates a genuine sense of location; be it the sound of surf on the beach, wind blowing across the decks of boats, or the rattle inside a Spitfire cockpit.

The system also nails the terrifying high-pitched scream of the Stuka dive-bombers, and the earth-shattering explosions that follow. Hans Zimmer's sparse score is

SPECIFICATIONS

M&K Sound IW150

DRIVE UNITS: 3 x 1in soft fabric dome tweeters; 2 x 5.25in polypropylene woofers
ENCLOSURE: Sealed, in-wall **FREQUENCY RESPONSE (CLAIMED):** 80Hz-20kHz
SENSITIVITY (CLAIMED): 90dB **POWER HANDLING (CLAIMED):** 400W
DIMENSIONS: 311(w) x 354(h) x 95(d)mm **WEIGHT:** 8.5kg

M&K Sound S150T

DRIVE UNITS: 1 x 1.1in soft fabric dome tweeter; 1 x 5.25in fibreglass woofer; 2 x 3.5in paper pulp side-firing drivers **ENCLOSURE:** Sealed **FREQUENCY RESPONSE (CLAIMED):** 80Hz-20kHz **SENSITIVITY (CLAIMED):** 86dB **POWER HANDLING (CLAIMED):** 200W
DIMENSIONS: 165(w) x 270(h) x 150(d)mm **WEIGHT:** 4.8kg

M&K Sound X12

DRIVE UNITS: 2 x long-stroke 12in woofers in a push-pull configuration
ENCLOSURE: Sealed **FREQUENCY RESPONSE (CLAIMED):** 20Hz-200Hz
ON BOARD POWER (CLAIMED): 400W RMS/700W peak **REMOTE CONTROL:** No **DIMENSIONS:** 440(w) x 656(h) x 453(d)mm **WEIGHT:** 36kg
FEATURES: LFE input; stereo line-level phono input/output; stereo line-level XLR input/output; variable phase and low-pass filter; THX EQ; +3dB/+5dB boost

conveyed with remarkable clarity; the ticking watch motif is evident throughout the soundtrack. The superlative midrange delivery is apparent during the sinking of a troop ship, while the X12 adds a deliciously cinematic low-end presence to the Spitfire's wing-mounted machine guns.

The Blu-ray of *A Quiet Place* is a favourite test disc, with a complex soundtrack. Despite the protagonists' efforts to remain unheard, the mix itself is filled with subtle audio cues, such as wind rustling through the leaves, and the hums and clicks of insects. These all come through with exceptional realism and precise localisation, immediately immersing you in the world of the film.

It's also a film that makes creative use of dynamic range, because when someone/thing does make a noise, my God you know about it. The transient response of these speakers is incredible, viscerally delivering the scares as the soundtrack suddenly goes from relative silence to very, very loud. The sound designers add plenty of low-frequency heft to these moments, which finds the X12 in fine form – it handled the dynamic beats with ease, establishing a solid foundation and carefully locking in with the other speakers.

I moved on to *Whiplash* (Blu-ray) to ensure the IW150s had retained M&K's musicality as well as its transparency. I quickly had my answer, thanks to a system that's tighter than a syncopated jazz quartet, carrying off every high hat, cymbal and snare drum with excellent timing.

Enhanced reputation

M&K Sound already has a solid reputation with AV fans, and the company's new in-wall range makes for an interesting development. Its ambition has been vindicated with an exceptional speaker that achieves the goal of delivering the brand's signature sound from an incredibly discreet enclosure. Here they're blended with other models from the M&K Sound range to produce a 5.1 system with detail, clarity and transience to spare. It's the kind of performance you'll instantly fall in love with ■

1. The IW150s may fit discreetly in-wall, but the X12 subwoofer is harder to hide

HCC VERDICT



M&K Sound IW150 5.1

→ £8,550 → www.mkcloudspeakers.uk

WE SAY: All the transparency and detail of a professional studio monitor, in an enclosure that can simply vanish. If you're looking for in-wall speakers, look here.



Monitor Audio Silver 500 AV12

Ed Selley listens to Monitor Audio's revamped home cinema-centric Silver range

WITH ITS NEW-LOOK Silver range, Monitor Audio hasn't skimped on the AV bits – as well as two centre speakers, there's a dedicated subwoofer and dipole/bipole surround model. We've put together a premium 5.1 pack using the Silver 500 floorstanders on L/R duty.

A key claim of this 5.1 package is impressive sensitivity. The front speakers boast a 90dB figure, and it becomes apparent during listening that they are easy to drive. They need comparatively little power to hit enjoyable levels and are unlikely to be much of a

challenge for price-comparable AVRs.

This sensitivity works hand in hand with an overall sense of scale. The duel between Peter Quill and Ego in *Guardians of the Galaxy: Vol 2* (Blu-ray) is reproduced with spine-tingling impact and a sense of the cavernous space

inside the planet. Each cabinet on the front soundstage can generate meaningful low-end extension, which adds another layer of depth. In addition, the dispersion from MA's dome tweeters is very wide, giving effects an enveloping nature.

Within all this space and scale is an excellent level of detail retrieval, making the Alexanderplatz escape in *Atomic Blonde* (Blu-ray) scintillatingly immersive. The MA package treats you to the varied sounds of the crowd, and the cavalcade of umbrella clicks is a perfect set of individual sounds rather than a single massive effect.

But in some ways, the most impressive member of the set is the most unobtrusive. The Silver W-12 sub never feels (or looks) like a piece of demolition equipment. Nor does its 'Impact' setting turn it into a foundation-worrying monster. The payoff, however, is that it's a device that can drop deep but remain in total control. Standard challenges for subs, like the Heroes Duty sequence in *Wreck-it Ralph* (Blu-ray), are handled with no bloat or overhang at any stage. In truth, the sub's clever auto-calibration tool (used with a

SPECIFICATIONS

SILVER 500

DRIVE UNITS: 2 x 8in bass drivers; 1 x 4in mid-range; 1 x 1in tweeter **ENCLOSURE:** Ported **FREQ. RESPONSE (CLAIMED):** 30Hz-35kHz (-6dB) **SENSITIVITY (CLAIMED):** 90dB **POWER HANDLING (CLAIMED):** 250W **DIMENSIONS:** 230(w) x 1,050(h) x 300(d) mm **WEIGHT:** 22.8kg

SILVER 350C

DRIVE UNITS: 2 x 6in bass drivers; 1 x 4in mid-range; 1 x 1in tweeter **ENCLOSURE:** Sealed **FREQ. RESPONSE (CLAIMED):** 40Hz-35kHz (-6dB) **SENSITIVITY (CLAIMED):** 90dB **POWER HANDLING (CLAIMED):** 200W **DIMENSIONS:** 560(w) x 235(h) x 240(d) mm **WEIGHT:** 14.9kg

SILVER FX

DRIVE UNITS: 1 x 6in midbass; 2 x 1in tweeters **ENCLOSURE:** Sealed; selectable dipole/bipole operation **FREQUENCY RESPONSE (CLAIMED):** 60Hz-35kHz (-6dB) **SENSITIVITY (CLAIMED):** 87dB **POWER HANDLING (CLAIMED):** 85W **DIMENSIONS:** 310(w) x 250(h) x 130(d) mm **WEIGHT:** 4.3kg

SILVER W-12 (SUBWOOFER)

DRIVE UNITS: 1 x 12in woofer **ENCLOSURE:** Sealed **FREQ. RESPONSE:** 20Hz-200Hz **ONBOARD POWER (CLAIMED):** 500W **REMOTE:** No **DIMENSIONS:** 340(w) x 340(h) x 380(d) mm **WEIGHT:** 20.1kg **FEATURES:** Stereo line-level input/output; LFE input; mic-assisted auto calibration; Movie, Music and Impact EQ modes

supplied mic) didn't appear huge to make a huge amount of correction in my room, but I didn't doubt that MA's adjustment and onboard DSP was ensuring a tight LFE grip.

Much as the Silver 500 hides its size relatively well, it needs plenty of space to reach its full potential. In a large room, its scale and sensitivity is going to come into its own and the native bass response is likely to be easier to control.

The dipole/bipole Silver FX model offers tonal balance with the front trio, but doesn't quite deliver a knockout blow over a more conventional standmount speaker.

That aside, spend time with the Monitor Audios and you won't want to see them leave. The nuanced handling of effects is first-rate, they're easy to drive, build quality is on the money, and they look the part, too. If you have the room – and desire a system where rear speakers can be installed surreptitiously – the Silver 500 pack delivers the goods ■

AV INFO

PRODUCT: 5.1 floorstanding system with dipole/bipole surrounds

POSITION: Below Gold and above Bronze in MA's metal-themed stable

PEERS: KEF Q Series; DALI Opticon

HCC VERDICT



Monitor Audio Silver 500 AV12

→ £3,600 → www.monitoraudio.co.uk

WE SAY: A largescale sound that should be an easy match for your AVR. Well-controlled LFE and discreet surrounds boost appeal.



SPECIFICATIONS

DX-2 SATELLITE

DRIVE UNITS: 1 x 0.75in tweeter; 1 x 3in midbass **ENCLOSURE:** Sealed **FREQ. RESPONSE (CLAIMED):** 120Hz-20kHz **SENSITIVITY (CLAIMED):** 84dB **POWER HANDLING (CLAIMED):** 60W **DIMENSIONS:** 120(w) x 190(h) x 122(d)mm **WEIGHT:** 2kg

DX-2 CENTRE

DRIVE UNITS: 1 x 0.75in tweeter; 2 x 3in midbass **ENCLOSURE:** Sealed **FREQ. RESPONSE (CLAIMED):** 120Hz-20kHz **SENSITIVITY (CLAIMED):** 86dB **POWER HANDLING (CLAIMED):** 60W **DIMENSIONS:** 310(w) x 120(h) x 122(d)mm **WEIGHT:** 2.7kg

WH-D8

DRIVE UNITS: 8in front-firing woofer **ENCLOSURE:** Sealed **FREQ. RESPONSE (CLAIMED):** 40Hz-120Hz **ONBOARD POWER (CLAIMED):** 70W **REMOTE:** No **DIMENSIONS (INCLUDING FEET/GRILLE):** 268(w) x 328(h) x 322(d)mm **WEIGHT:** 7.8kg **FEATURES:** Stereo phono input; crossover control; phase switch; auto on/off

Wharfedale DX-2

Wharfedale's continued commitment to affordable surround sound cheers **Ed Selley**

IT WASN'T TOO long ago that an entry-level AVR partnered with a sub/sat speaker package was the default starting position for home cinema thrills. As such, any self-respecting speaker brand had one in its inventory. Yet times change – soundbars have left the compact home cinema option looking a bit less compact.

Not everybody has abandoned the old ways, though. Wharfedale made us very happy with its DX-1SE array [HCC #267], which was very much in the classic sub/sat system mould, and has now clearly felt that the design had more to offer, so has released the DX-2.

On the face of it, it doesn't look like too much has changed. You still get five little speakers and a subwoofer. But Wharfedale says that a lot of what you see is different – including cabinet designs, drivers that have been 'fine-tuned', and boosted subwoofer power.

In terms of speaker design, the DX-2 doesn't push any boundaries. It features two pairs of compact satellites that function as left and right channels, front and rear. Each is a two-way design, and

looks like a shrunken bookshelf speaker. These satellites are joined by a centre, which adds a second midbass driver to the spec, and the WH-D8 active subwoofer. In a world of multi-driver monsters with output power in the kilowatts, a sub with a single 8in driver and 70W (150W peak) amp might not stir the blood, but this is still rather more subwoofer than some soundbar rivals possess.

The WH-D8 will be busy as the satellites don't drop especially low – Wharfedale quotes a response of 100Hz with a -6dB roll-off. This means the sub's upper output is likely to be at least partially directional; I found it does its best work on-axis with the front speakers.

Turning up the Wick

The price may be £350 but the DX-2 system doesn't sound cheap. With the bruising core TrueHD mix of *John Wick: Chapter 2* (Blu-ray), these speakers cover all the basics correctly. Using a 100Hz crossover, I didn't perceive there to be any 'hole' in the system's bass response; the DX-2 instead sounded cohesive and controlled.

The enclosures are, in home cinema terms, fairly small, yet the soundstage delivered never sounds small and creates a convincingly room-filling experience. Sure, there are limits. The sequence where Wick falls back through the catacombs can reach the maximum level of what the satellites are capable of handling,

meaning they sound more congested, but the volume this occurs at is fairly substantial.

This limit is much more on the part of the satellites than the sub. The WH-D8 does a superb job all the way from its handover to the satellites, down to the point where energy is felt rather than heard. It sounds larger and more potent than you'd expect, and balances this with a likeable sense of agility and speed.

This all means the DX-2 is well equipped to tackle fast-paced but deft movie moments. The sequence where Joy and Sadness are ejected from the HQ in *Inside Out* (Blu-ray) convinces, with the speakers nailing the movement of the memory balls and general sense of disarray while keeping the score and dialogue distinct from the wider effects.

The use of a dedicated centre speaker pays dividends. Sharing drivers across the LCR stage keeps it uniform tonally, resulting in a robust sound with smooth transitions, and dialogue that's never lost in the mix.

The system is also a satisfying listen late at night with the volume dropped low, and turns in a fine presentation with music too. With *Losing to You* by Stars, it delivers the vocal centre of the song with surprising scale and genuine realism.

The sonic chops of this sub-£500 package are considerable, while styling is good and setup fuss-free. Like its predecessor, it's a bit of a bargain ■

AV INFO

PRODUCT:
Compact 5.1
speaker package

POSITION:
Entry-level, below
the larger Diamond 11
HCP sub/sat system

PEERS:
Tannoy HTS-101 XP;
ELAC Cinema 5.1

HCC VERDICT



Wharfedale DX-2

→ £350 → www.wharfedale.co.uk

WE SAY: Wharfedale's DX-2 is well priced, easy to live with and sounds absolutely superb for the money. A fine choice for an affordable AV system.



Steve Withers wires up 13 separate cabinets and settles in for a movie or two with Elipson's Atmos debut

Elipson Prestige Facet

The Prestige Facet range is composed of floorstanders and compact models, along with subwoofers and specialist home cinema speakers. Although each model is available separately, Elipson offers various packages, one of which is auditioned here: a full monty 7.2.4-channel system priced at £3,500. I've always advocated a 7.2.4 array for those wanting a truly immersive experience – and this package delivers exactly that. It's smartly styled too, with the sculpted silicone rings surrounding each tweeter and mid/bass driver (designed to reduce baffle-borne diffractions and give a smoother listening experience) adding a level of blinging charm.

The Atmos mix on *Iron Fist* (Netflix) sounds stunning here. Season Two's first episode ends with Danny Rand practicing his martial arts in his basement, and it's the perfect example of the creative use of object-based audio to enhance the visuals. You can hear subway trains rumbling overhead thanks to

the upward-firing drivers, the dipole surrounds ensure his breathing echoes around the room, and the front three speakers pick out the higher frequencies as the metal door he's punching buckles. The impacts of his glowing fist are given huge weight as the subs load the room with bass energy.

With the frenetic Dolby Atmos track (designed by the legendary Gary Rydstrom) on *Ready Player One* (4K Blu-ray), Elipson's 7.2.4 configuration takes full advantage. During the opening race, cars and other vehicles track cleanly from front to rear, demonstrating an excellent overall balance. At one point Parzival is driving under the race track, facilitating plenty of overhead effects that Elipson's 6ATM modules deliver with real panache.

The race ends with the arrival of King Kong (it's that sort of movie...), and the combined low-end of the 14F floorstanders and the bass extension of the subwoofers makes sure the venerable ape's presence is well and truly felt.

The system takes the dynamic swells in the soundmix in its stride. It also copes with multiple layers of effects; an inherent fidelity and neutrality means each isolated sound and object can be picked out with ease.

There's a scene towards the end of the film where a bomb called the Cataclyst is

SPECIFICATIONS

PRESTIGE FACET 14F

DRIVE UNITS: 1 x 1in tweeter; 1 x 6.5in midbass driver; 1 x 6.5in woofer
ENCLOSURE: Front-ported **FREQ. RESPONSE (CLAIMED):** 38Hz-25kHz **SENSITIVITY (CLAIMED):** 92dB **POWER HANDLING (CLAIMED):** 150W **DIMENSIONS:** 238(w) x 1,026(h) x 351(d)mm **WEIGHT:** 20.5kg

PRESTIGE FACET 14C

DRIVE UNITS: 1 x 1in tweeter; 2 x 6.5in midbass drivers **ENCLOSURE:** Sealed **FREQ. RESPONSE (CLAIMED):** 43Hz-25kHz **SENSITIVITY (CLAIMED):** 93dB **POWER HANDLING (CLAIMED):** 150W **DIMENSIONS:** 600(w) x 310(h) x 250(d)mm **WEIGHT:** 15kg

PRESTIGE FACET 7SR

DRIVE UNITS: 2 x 1in tweeters; 1 x 5.5in midbass driver **ENCLOSURE:** Dipole, down-ported **FREQ. RESPONSE (CLAIMED):** 65Hz-25kHz **SENSITIVITY (CLAIMED):** 87dB **POWER HANDLING (CLAIMED):** 80W **DIMENSIONS:** 380(w) x 220(h) x 170(d)mm **WEIGHT:** 5kg

PRESTIGE FACET 6ATM

DRIVE UNITS: 1 x 1in tweeter; 1 x 5.5in midbass driver **ENCLOSURE:** Dolby Atmos module **FREQ. RESPONSE (CLAIMED):** 65Hz-25kHz **SENSITIVITY (CLAIMED):** 90dB **POWER HANDLING (CLAIMED):** 70W **DIMENSIONS:** 207(w) x 181(h) x 290(d)mm **WEIGHT:** 4.8kg

PRESTIGE FACET SUB10

DRIVE UNITS: 1 x 10in woofer **ENCLOSURE:** Down-ported, front-firing **FREQ. RESPONSE (CLAIMED):** 27Hz-150Hz **ONBOARD POWER (CLAIMED):** 250W Class D amplifier **REMOTE:** No **DIMENSIONS:** 405(w) x 424(h) x 445(d)mm **WEIGHT:** 22kg **FEATURES:** Stereo phono line-level input; LFE input; 0-180 phase switch; automatic standby; variable crossover/gain adjustment

detonated, and a massive sonic shockwave moves from the front of the room to the rear like a tsunami of sound. I'm pretty sure every speaker was energised at this point, and the system as a whole seemed in unison.

Bargain hunt

Elipson's Prestige Facet range offers plenty for system builders, and a sound that's rich in detail, neutral across the frequency band, and dynamic and forceful. The clean and thoroughly modern appearance is a major plus point, while the build quality and finish is exceptional. Most importantly, this 7.2.4 package is about as immersive as you can get. The £3,500 ticket makes it a bit of a bargain ■

AV INFO

PRODUCT: Floorstanding 7.2.4 Dolby Atmos system

POSITION: Below the in-wall/on-wall Infinite series

PEERS: ELAC Debut; DefTech DP9000; Jamo S800

HCC VERDICT



Elipson Prestige Facet

→ £3,500 → www.elipson.com

WE SAY: A beautifully made and cleverly designed speaker package. Great value, and immerses you in a way that few other systems can.

Q Acoustics 7000i 5.1 Slim

Q Acoustics has tweaked its 7000 Series, adding its slimmest subwoofer yet. **Ed Selley** weighs it up



HAVING ARRIVED IN the affordable speaker market and issued a swift kicking to the established order, things have calmed down a little at Q Acoustics. Its ranges of speakers are now seeing upgrades rather than wholesale changes – a reflection that they ain't broke and don't really need fixing.

One line to receive some attention is the curvaceous 7000i Series, here released in a new bundle referred to as the 'Slim.'

The satellite speakers, also used in Q Acoustics' 7000i Plus and 7000i packages, have been slim from the outset and remain so. They all have an identical driver complement;

two 3in midbass units sited on either side of a ring radiator tweeter. This use of two midbass drivers gives each satellite a fairly large radiating area and a claimed roll off of 95Hz. The only difference between the 'LR' satellite and the 'Ci' centre is that the orientation and mounting point for the

foot (which, usefully, can be rotated to become a wall-mount) are changed.

These satellites are joined by the 7060S subwoofer. In a world of fancy bass boxes, this is charmingly prosaic. It's a sealed design with a forward-, or depending how you place it, side-firing 8in driver, powered by a 150W Class D amp. But it claims a solid 35Hz-200Hz frequency range, which is the important part.

Colour options are black or white. The speakers look cute, and their metal housings feel solid and inert. The spring-loaded terminals are a bit fiddly, though.

Seamless integration

This array has an obvious positive attribute: with the 7060S sat at the front of the room underneath the centre speaker (with a 100Hz crossover), the handover between sub and satellites is deliciously seamless. It's a neat trick, showing some efficient system matching from the Q Acoustics design team.

Just as pleasing is the cohesive soundfield crafted by those five identical satellites. There's a slickness to pans across the LCR stage even when the speakers themselves are placed fairly wide apart, while front to back transitions are extremely believable.

SPECIFICATIONS

7000LR

DRIVE UNITS: 2 x 3in midbass; 1 x 1in tweeter
ENCLOSURE: Sealed **FREQ. RESPONSE (CLAIMED):** 95Hz-20kHz **SENSITIVITY (CLAIMED):** 85dB **POWER HANDLING (CLAIMED):** 100W **DIMENSIONS:** 100(w) x 240(h) x 160(d)mm **WEIGHT:** 1.6kg

7000CI

DRIVE UNITS: 2 x 3in midbass; 1 x 1in tweeter
ENCLOSURE: Sealed **FREQ. RESPONSE (CLAIMED):** 95Hz-20kHz **SENSITIVITY (CLAIMED):** 85dB **POWER HANDLING (CLAIMED):** 100W **DIMENSIONS:** 207(w) x 115(h) x 160(d)mm **WEIGHT:** 1.6kg

7060S (SUBWOOFER)

DRIVE UNITS: 1 x 8in woofer **ENCLOSURE:** Sealed **FREQ. RESPONSE (CLAIMED):** 35Hz-200Hz **ONBOARD POWER (CLAIMED):** 150W Class D amp **REMOTE:** No **DIMENSIONS:** 480(w) x 324(h) x 150(d)mm **WEIGHT:** 11kg **FEATURES:** Stereo phono/LFE input; 0-180 phase switch; auto standby

On top of this the 7000i has consistently good tonality and detail. The pared-back DTS-HD MA 5.1 mix for 2016 journalist drama *Christine* (Blu-ray) is handled beautifully. Having sub/sat systems sound big when there is plenty of bombastic action isn't that tricky. The 7000i sounds big and convincing with simpler and smaller-scale material too.

There are limits to this system's potential, and how much this matters will depend on your viewing preferences. The catacomb sequence in *John Wick 2* (Blu-ray), with its dynamic and fast-hitting gunfire, shows that while the 7060S subwoofer is controlled and well integrated, it doesn't deliver the levels of slam that more traditionally designed models can offer. However, every time I wanted a bit more fury from the Q Acoustics system, I was soon revelling in just how well it gets on with everything else. Broadcast TV is unfailingly a crisp, clean and well-balanced listen, and it's particularly strong at generating an immersive experience from a stereo feed, with dialogue from the centre channel clear and tonally accurate. I'm also struck by how effective this is used in 2.1-channel guise. Listening to *Lies Are More Flexible* by electronic duo GusGus (Qobuz, CD-quality FLAC) proves musical in a way that many 2.1 systems struggle to match.

Anyone looking to equip a lounge with a discreet system, but with their sights on something a little upmarket, should investigate this sweet-sounding array ■

AV INFO

PRODUCT: Compact 5.1 speaker system

POSITION: Q Acoustics' premium sub/sat package

PEERS: Elipson Planet M; Cambridge Audio Minx

HCC VERDICT



Q Acoustics 7000i 5.1 Slim

→ £800 → www.qacoustics.co.uk

WE SAY: The 7000i Slim is easy to live with, flexible, and an assured all-rounder. Some might want more excitement and bass brutality.

**HOME
CINEMA**
Choice
RECOMMENDED



Klipsch Reference

The American brand is back in the UK with an all-new Atmos-ready series. **Ed Selley** thinks it means business

IT'S HARD TO think of systems that come in at a similar price that offer demonstrably more bang for your buck than this one. Klipsch's Reference Series may not be its flagship home cinema offering (that'll be the Reference Premiere), but it's undeniably effective.

What ties it together – and is a characteristic of Klipsch products going back 70 years – is the use of horn-loaded tweeters.

Here, the tweeter is mounted deep inside a 'Tractix' horn assembly recessed into the cabinet front. This turns the tweeter into a compression driver, boosting sensitivity and dispersion.

Klipsch partners the tweeter with copper-coloured mid/bass units. Some may

struggle to be won over by this design flourish and feel the need to keep grilles on. Overall fit and finish is extremely good though, and there's a no-nonsense quality here that I think lends the speakers a little timelessness.

The R-620F floorstander's sensitivity rating is 96dB, and the system as a whole doesn't require oodles of power to go meaningfully and impressively loud. This in turn leads to a presentation that revels in largescale events, such as the drone attack sequence in *Star Trek Beyond* (Blu-ray). Here, the overrunning wave of drones is well captured in the Atmos height layer with crisp, discernible detail, while information moves slickly from channel to channel and the drivers' wide dispersion ensures an unbroken soundfield.

Klipsch's slim R-34C centre fulfils its role admirably. Dialogue is easy to follow and there was more weight and scale than I was expecting. Crucially, despite the rather different configuration between it and the L/R enclosures, the front stage sounds integrated

SPECIFICATIONS

R-620F

DRIVE UNITS: 2 x 6.5in woofers; 1 x 1in Tractix tweeter **ENCLOSURE:** Ported **FREQ. RESPONSE (CLAIMED):** 38Hz-21kHz **SENSITIVITY (CLAIMED):** 96dB **POWER HANDLING (CLAIMED):** 100W **DIMENSIONS:** 240(w) x 1,017(h) x 386(d)mm **WEIGHT:** 18.6kg

R-51M

DRIVE UNITS: 1 x 5.25in woofer; 1 x 1in Tractix tweeter **ENCLOSURE:** Ported **FREQ. RESPONSE (CLAIMED):** 68Hz-21kHz **SENSITIVITY (CLAIMED):** 93dB **POWER HANDLING (CLAIMED):** 85W **DIMENSIONS:** 178(w) x 338(h) x 215(d)mm **WEIGHT:** 5kg

R-34C

DRIVE UNITS: 4 x 3.5in woofers; 1 x 1in Tractix tweeter **ENCLOSURE:** Ported **FREQ. RESPONSE (CLAIMED):** 82Hz-21kHz **SENSITIVITY (CLAIMED):** 96dB **POWER HANDLING (CLAIMED):** 100W **DIMENSIONS:** 660(w) x 133(h) x 157(d)mm **WEIGHT:** 5.6kg

R-41SA

DRIVE UNITS: 1 x 4.5in woofer; 1 x 1in Tractix tweeter **ENCLOSURE:** Ported **FREQ. RESPONSE (CLAIMED):** N/A **SENSITIVITY (CLAIMED):** N/A **POWER HANDLING (CLAIMED):** 50W **DIMENSIONS:** 146(w) x 180(h) x 331(d)mm **WEIGHT:** 2.7kg

R-100SW (SUBWOOFER)

DRIVE UNITS: 1 x 10in forward-firing woofer **ENCLOSURE:** Ported **FREQUENCY RESPONSE (CLAIMED):** 32Hz-120Hz **ONBOARD POWER (CLAIMED):** 150W **REMOTE:** No **DIMENSIONS:** 318(w) x 368(h) x 417(d)mm **WEIGHT:** 10.9kg **FEATURES:** LFE input; stereo phono input; volume, crossover and phase control

in a way that even some more expensive packages I've heard have struggled with.

Lower mid-tones/upper bass registers are robust, and the benefit this grants the pack is considerable. And when the R-100SW sub is called into action, it proves to be a fine performer, dropping deep to tackle the explosive charges during the attack on Scarif in *Rogue One* (Blu-ray). Its spec is somewhat meagre, but it seems Klipsch has worked hard to ensure cabinet, amplifier and driver work together in a manner that is greater than the sum of its parts. It stays controlled and agile, and keeps pace with this system's passive speakers even at the high listening levels they can achieve.

When the sonic results are this convincing, aesthetic concerns begin to fade away... ■

AV INFO

PRODUCT: 5.1.2 floorstanding speaker system

POSITION: Next to Atmos-integrated models in Klipsch's home theatre stable

PEERS: Elipson Prestige Facet; Monitor Audio Bronze

HCC VERDICT



Klipsch Reference 5.1.2

→ £2,000 → www.klipsch.co.uk

WE SAY: Klipsch's Atmos array sounds big and bold but cohesive too and represents excellent value for money. It's not a style system, though...

**HOME
CINEMA**
Choice
BEST BUY



SPECIFICATIONS

DRIVE UNITS: 1 x 8in Flax midbass cone; 1 x 1in inverted dome alloy tweeter **ENCLOSURE:** Open-backed **FREQ. RESPONSE (CLAIMED):** 48Hz-28kHz **SENSITIVITY (CLAIMED):** 90dB **POWER HANDLING (CLAIMED):** 25W-150W **DIMENSIONS:** 299(w) x 299(h) x 127(d)mm **CUT OUT:** 264mm diameter **WEIGHT:** 5.1kg

FEATURES: Separate mounting frame; tool-free installation clamps; +/-3dB HF trim switch; supplied with paint shield, plus circular and square white paintable grilles

Focal 300 ICW 8

Richard Stevenson finds these in-ceiling speakers easy to fit and lovely to listen to

FOR THE ULTIMATE home cinema install, an in-ceiling speaker is appealing. And if you thought such models were all about convenience and looking pretty rather than performance, you should hunt down Focal's 300 ICW 8 and have a listen...

This is the largest of the brand's Flax driver 300 Series installation range. At £400 each – and hence £1,600 to properly top off a Dolby Atmos array – they are patently not a budget solution. But in comparison to standalone Atmos upfirs, the price isn't extortionate.

This series distils a whole lot of Focal's Aria series technology into a coaxial, two-way installation speaker. Most obvious is the distinctive buff-coloured driver formed with fibres of natural flax. This makes for a light, rigid cone that's also more eco-friendly than drivers hewn from polypropylene plastic.

Complementing the 8in midbass cone is Focal's 1in inverted dome magnesium-aluminium alloy tweeter, also derived from the Aria lineup.

Like many coaxial in-ceiling speakers, the Focals have directional tweeter pods to 'aim' high-frequency sound. Yet that might not be the best idea in an Atmos setup. The ICW 8's off-axis delivery is incredibly smooth, so leaving them pointing straight down gives the best balance at all seating positions.

If you do end up right below the speaker, or on-axis to the tweeter, they are going to sound rather bright but Focal has that in hand. An 'HF trim' switch on the rear of the chassis cuts treble by 3dB. The same switch can also boost treble by 3dB for over-dampened rooms or listening a long way off-axis.

Mounting excitement

The ICW 8 makes DIY in-ceiling Atmos about as easy as the project gets. The mounting frame is separate from the driver and is secured into place with four sprung-loaded clamps. You don't even need a screwdriver.

You do have to cut a large hole in your ceiling first though. Focal supplies a cardboard template for this. When positioning the hole, ensure the speaker falls between joists with room for the clamps, and that you have the 12.5cm or more mounting depth required. If you are using large-diameter speaker cable you'll need to factor this in to your measurements too, as Focal's speaker terminals are at the very rear of the driver chassis.

Having planned speaker position and cable routing, draw around the template and cut the hole slowly with a dedicated plasterboard handsaw. Go cautiously and you will feel if you hit something other than plasterboard. There is plenty of tolerance on the size of the hole so don't worry too much about following the template with millimetre precision.

The lightweight frame then slots into the hole and the four clamps push back and inwards to lock it to the ceiling. Sprung-loaded bare-wire binding posts are fairly easy to connect to when you are up a ladder holding

a hefty driver in one hand. The driver then slots into the frame and turns 45 degrees to lock into place. It really is that simple.

In each box you will also find a magnetic shield, so you can paint the ceiling without getting emulsion all over your speaker, and two white grilles. One is circular and the other square, the choice being purely cosmetic.

Performance wise, here Focal really shakes up the notion that in-ceiling speakers just need to make some noise and be reliable. With stereo music these are very evenly balanced off-axis and deliver a vigorous sound that would give plenty of expensive bookshelf speakers a run for their money. Bass extends usefully down to almost 50Hz (-6dB), ensuring a full-range experience, and the top-end is detailed without being frisky or bright. Lana Del Rey's *Lust for Life* CD comes across moody, warm and engaging with plenty of punch on the rap-style tracks.

Switching to *X-Men: Apocalypse* (Blu-ray) down-mixed to stereo, I was so impressed by the sound I decided to hook up a REL HT/1003 sub for LFE. The partnership was frankly outstanding. Dialogue was crisp and articulate, effects had detail and impact (if not cast around the room) and the sound hung together even at very high volumes. As the roof comes off Sydney Opera House and the bridge explodes, the ICW 8s offer excitement by the bucket-load. There's a real sense of dynamism, again aided by that full-range delivery.

Overall, Focal's 300 ICW 8s are superb for the money. They sound rich but detailed, deliver high SPLs and, thanks to that tool-free clamp, are among the easiest to fit in-ceiling loudspeakers on the market. Focal has delivered an audiophile speaker in a sleek, build-in format, and its neutral balance should make it a good choice for Atmos overheads irrespective of your main speaker brand ■

AV INFO

PRODUCT: Coaxial in-ceiling speaker with 8in midbass driver

POSITION: Largest in-ceiling 300 Series model

PEERS: KEF C1200RR-THX; GoldenEar Invisia 650

HCC VERDICT



Focal 300 ICW 8

→ £400 (each) → www.focal.com

WE SAY: These sound dynamic and engaging, are easy to install, and will match a wide range of partnering speakers.

HOME CINEMA
Choice
BEST BUY



David Vivian auditions
a heavy-hitting 5.1 system that's
focused on delivering stunning sound

Bowers & Wilkins 700 Series

IF YOU'RE GOING to drop over £7,000 on a 5.1 speaker system, you've every right to expect – as Doc Brown put it in the expletive over-dubbed print of *Back to The Future* – some serious 'stuff'. And few speaker makers do stuff more seriously than Bowers & Wilkins.

Its new 700 Series lineup effectively replaces the old CM line, and fashions itself as the affordable alternative to the company's flagship 800 Series Diamond range.

Technology has been trickled down, including de-coupled tweeters, and Continuum cone midrange and Aerofoil bass drivers. Our system uses the 702 S2 floorstanders, 705 S2 standmounts and HTM71 S2 centre. On LFE duty is the DB4S subwoofer. The audio track of *Thor: Ragnarok* (BD) has attracted some stick for sounding

strangely hemmed in, a comparatively muted accompaniment to the larger-than-life onscreen action. All I can say is, I didn't really notice. When Thor and Surtur go for it in the opening scenes, I can almost feel the heat and flying embers.

Let me put it another way. B&W's 700 Series 5.1 is simply immense – system Viagra for a sagging soundtrack, an open window for *Dunkirk*-level awesomeness when it presents (we'll get to that film in a moment). It's something of a truism that you can never have enough bandwidth and you can never have enough resolution, but there's so much of each on tap here it's hard to imagine needing more.

Perhaps the most impressive thing is the sheer, unadulterated intelligibility. Everything is so easy to understand and plausible. It sounds as if stuff is in the room with you: palpable, tactile, full of texture and dynamic life.

Breaking it down, this speaker ensemble clearly has formidable resolving power and precision, seamless integration front-to-rear and a beautifully open, expressive and lucid mid-band. The clean, extended upper

SPECIFICATIONS

B&W 702 S2

DRIVE UNITS: 1 x 1in tweeter; 1 x 6in midrange; 3 x 6.5in bass drivers **ENCLOSURE:** Ported **FREQ. RESPONSE (CLAIMED):** 45Hz-28kHz **SENSITIVITY (CLAIMED):** 90dB **POWER HANDLING (CLAIMED):** 30W-300W **DIMENSIONS:** 200(w) x 1,087(h) x 337(d)mm **WEIGHT:** 29.5kg

B&W HTM71 S2

DRIVE UNITS: 1 x 1in tweeter; 1 x 4in midrange driver; 2 x 6.5in bass drivers **ENCLOSURE:** Ported **FREQ. RESPONSE (CLAIMED):** 50Hz-28kHz **SENSITIVITY (CLAIMED):** 89dB **POWER HANDLING (CLAIMED):** 30W-100W **DIMENSIONS:** 590(w) x 225(h) x 285(d)mm **WEIGHT:** 18.3kg

B&W 705 S2

DRIVE UNITS: 1 x 1in tweeter; 1 x 6.5in midbass **ENCLOSURE:** Ported **FREQ. RESPONSE (CLAIMED):** 50Hz-28kHz **SENSITIVITY (CLAIMED):** 88dB **POWER HANDLING (CLAIMED):** 30W-120W **DIMENSIONS:** 200(w) x 407(h) x 285(d)mm **WEIGHT:** 9.3kg

DB4S (SUBWOOFER)

DRIVE UNITS: 1 x 10in bass driver **ENCLOSURE:** Sealed **FREQ. RESPONSE (CLAIMED):** 10Hz-350Hz (-3dB) **ONBOARD POWER (CLAIMED):** 1,000W **REMOTE:** No. (But control via DB Subwoofer app) **DIMENSIONS:** 360(w) x 377(h) x 368(d)mm **WEIGHT:** 26kg **FEATURES:** Stereo XLR input; stereo phono input; 2 x 12V trigger; RS-232; digital preamp with Dynamic EQ; app-based setup

frequencies are naturally textured and free from grain, gloriously detailed yet unforced. And the size of the soundstage it's capable of weaving – during the beach strafing of *Dunkirk* (Blu-ray) for example – almost defies belief.

Bruno Mars' *Finesse* (CD) has never sounded more full-on or, indeed, dripping in finesse. Tempo and rhythm, so often the downfall of AV speaker systems, is truly nailed here. And it all comes together to thrilling and deeply satisfying effect with the Blu-ray of *Blade Runner 2049*. In the hands of this setup, the mix is immersive, powerful and yet incredibly subtle. Falling rain is so convincing it actually gave me a little shiver; at the other end of the decibel scale, the visceral intensity of the Las Vegas attack still has me flinching, even though I've watched the movie several times.

£7,500 is a lot of money but, honestly, it doesn't get much better than this ■

HCC VERDICT



B&W 700 Series 5.1

→ £7,350 → www.bowers-wilkins.co.uk

WE SAY: Not for the faint of heart or tight of space, but this system's bold style and superb sonics win the day.



Jamo returns to the UK market with an affordable array that includes Dolby Atmos support. **Ed Selley** listens up

SPECIFICATIONS

S 807

DRIVE UNITS: 2 x 5in midbass; 1 x 1in tweeter
ENCLOSURE: Slot-ported **FREQ. RESPONSE (CLAIMED):** 42Hz-26kHz **SENSITIVITY (CLAIMED):** 90dB **POWER HANDLING (CLAIMED):** 100W **DIMENSIONS:** 915(h) x 191(w) x 252(d)mm **WEIGHT:** 15.7kg

S 81 CEN

DRIVE UNITS: 2 x 4in midbass; 1 x 1in tweeter
ENCLOSURE: Slot-ported **FREQ. RESPONSE (CLAIMED):** 71Hz-26kHz **SENSITIVITY (CLAIMED):** 86dB **POWER HANDLING (CLAIMED):** 60W **DIMENSIONS:** 184(h) x 435(w) x 220(d)mm **WEIGHT:** 6.3kg

S 801

DRIVE UNITS: 1 x 4in midbass; 1 x 1in tweeter
ENCLOSURE: Slot-ported **FREQ. RESPONSE (CLAIMED):** 76Hz-26kHz **SENSITIVITY (CLAIMED):** 85dB **POWER HANDLING (CLAIMED):** 60W **DIMENSIONS:** 285(h) x 156(w) x 163(d)mm **WEIGHT:** 6.5kg

S 8 ATM

DRIVE UNITS: 1 x 4in full-range driver
ENCLOSURE: Sealed **FREQUENCY RESPONSE (CLAIMED):** N/A **SENSITIVITY (CLAIMED):** N/A **POWER HANDLING (CLAIMED):** 50W **DIMENSIONS:** 191(h) x 180(w) x 242(d)mm **WEIGHT:** 6.3kg

S 808 SUB (SUBWOOFER)

DRIVE UNITS: 1 x 8in woofer **ENCLOSURE:** Slot-ported **FREQ. RESPONSE (CLAIMED):** 39Hz-180Hz **ONBOARD POWER (CLAIMED):** 100W **REMOTE:** No **DIMENSIONS:** 457(h) x 354(w) x 176(d)mm **WEIGHT:** 10.1kg **FEATURES:** Phono line input/LFE input; crossover/phase control; auto on/off

Jamo S Series

JAMO'S 800 SERIES is a ten-strong range which can be assembled *à la carte*, but can also be bought in defined setups. This system uses the S 807 HCS package (5.0), which features the S 807 floorstanders, S 801 standmounts, and S 81 CEN centre speaker. These five can be had for £700.

You can then augment the package as you wish. Most will plump for the £220 S 808 SUB subwoofer. And then there are the S 8 ATM Dolby Atmos speakers (£200-per-pair) to get to a 5.1.2 system.

The S 8 ATM at first looks typical of the upfiring, reflective breed. There is, however, only a single 4in driver in each speaker, where rival models feature separate tweeters.

More unusual is how the speaker connects. Instead of a pair of speaker terminals, the S 8 ATM instead slots into four sockets on the top of the S 807. You then make the speaker cable connection at the foot of that floorstanding

speaker, rather than having to have a run of cable trailing most of the way up the back. The grilles can be moved up to meet the angled grille of the S 8 ATM, making for a much more streamlined aesthetic.

Connected to a Marantz SR6012 receiver, the first aspect of the Jamos' performance that I clocked was their sensitivity. This system proved able to fill a relatively large space without any appreciable feeling of strain, which further aids their value proposition.

Such unforced headroom is useful when you give the speakers a soundmix with real scale. The attack on the USS Franklin by Krall's swarm ships, accompanied by the Beastie Boys, in *Star Trek Beyond* (Blu-ray, Dolby Atmos) is a sequence that the Jamos handle admirably. The dulcet tones of the New York rappers' *Sabotage* are kept distinct from the rest of the mix, and there is an enjoyable feeling of immersion from the height channels as the wave of ships engulfs the Franklin. This is no less effective as the action moves into the station itself, with the system reminding you that you're in an enclosed (if vast) space without it being overplayed.

A cohesive soundstage is maintained, with effects pans working well between the differing drivers of each speaker. Each model

seems tonally even across its frequency range, and has a sufficiently wide dispersion to create a soundfield that extends well beyond the outer edge of the floorstanders. With all seven channels in play, there's a consistent feeling of control and precision.

The S 8 ATMs do a good job of conveying overhead audio. There's no overt absence of HF energy, despite the lack of a tweeter. As a means of adding three-dimensionality, they do a fine (although subtle) job for a very reasonable price. The subwoofer, meanwhile, is encouragingly small and discreet for an LFE channel, but a basic lack of capacity does rob it of both low-end extension and control. Jamo sells a larger 10in model for only £45 extra, and that may hold its own rather better.

Even with that caveat, this is a strong arrival in the affordable full-size speaker arena ■

AV INFO

PRODUCT: Affordable full-size speaker system with Atmos modules

POSITION: Jamo's newest home cinema line, above the C Series

PEERS: Focal Sib Evo Dolby Atmos

HCC VERDICT



Jamo S Series 5.1.2

→ £1,100 → www.jamo.com

WE SAY: The superb design and price tag catch the eye, while the performance is strong – albeit with some LFE limitations.



UHD Blu-ray deck's multi-HDR support, awesome build quality and premium performance dazzles **Steve May**

Panasonic DP-UB9000

THE DP-UB9000 IS an Ultra HD Blu-ray player of few compromises and many pleasures. The most ambitious disc spinner so far to emerge from Panasonic, this high-end deck is unique in offering both Dolby Vision and HDR10+ dynamic metadata support, alongside HDR10 and HLG. And that's just the tip of an iceberg of functionality.

My first thought when unboxing was that someone had bungled the retail price. The UB9000 looks considerably posher than you might expect for the sub-£1K tag. Attention to detail is awe-inspiring.

A two-layer steel construction means the deck is

reassuringly weighty. Corners are rolled and smooth. A hairline finish on the front panel lends the player a minimalistic, upmarket demeanour. Substantial isolating feet have anti-slip pads.

Connections are generous, too. In addition to two HDMI outputs (one for audio only), there are two USB ports (one a fast v3.0), optical and coaxial digital audio outputs, stereo analogue phonos and a full 7.1-channel output, plus balanced XLR stereo connectors.

AV INFO

PRODUCT:
High-end Ultra HD Blu-ray player

POSITION:
Panasonic's flagship disc spinner

PEERS:
Pioneer UDP-LX500;
Cambridge Audio CXUHD

Powered up, it's clear there's been a minor cosmetic upgrade to the user interface (it's a little cleaner), but the navigation is unchanged from the rest of the Panasonic BD fleet. There are buttons for Videos, Music, Photos, Home Network, Network Service and Setup.

Unlike the now departed Oppo UDP-205 and UDP-203 players, and the Pioneer UDP-LX800/LX500 machines, Panasonic hasn't shortchanged users on streaming apps. The service portal supplies Netflix, Amazon Prime Video, YouTube and BBC News/Sport. I would have liked to have seen a greater focus on streaming audio services, though.

Check out my data talents!

Once spinning a disc, it doesn't take long to discover the in-depth Playback Info screen. Amid a bunch of useful disc information, it rather helpfully reads HDR10 metadata, revealing Maximum Frame-Average Light Level (MaxFALL) and Maximum Content Light Level (MaxCLL) figures from playing platters. For example, I'm told that *Pacific Rim: Uprising* (one of the UHD titles used to assess image quality) was mastered for 1,000 nits and has a MaxFALL of 863 nits. This kind of minutia is endless fascinating in a geeky sort of way. Knowing that *Despicable Me 2* boasts a max average HDR brightness of 553 nits is certain to make me a big hit at parties.





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Ultimately, the *raison d'être* of the DP-UB9000 is image quality. The visuals from this deck, which has THX 4K HDR Source certification, are positively jaw-dropping. Intensely detailed, with wide smooth colour, it presents peerless pictures. Some of this prowess can be attributed to Panasonic's second-gen HCX video processor. An evolution of what we saw in the earlier well-specified DMP-UB900, it includes a number of HDR refinements, including an HDR Optimizer to partner the player with a display.

This latter adjustment is powerful but intuitive to use. You can select OLED, High Luminance Projector, Basic Luminance Projector, Super High Luminance LCD, Middle or High Luminance LCD and Basic Luminance LCD – choose which best describes your display.

The Optimizer aims to limit clipping on lower-brightness TVs/PJs by setting a tone map target and carrying out metadata conversion in the player. Panasonic's reasoning is that not all displays will accurately tone map (that's to say, compensate for any shortfalls in luminance), particularly when content has been mastered above 1,000 nits, leading to (for example) bleached-out cloudy skies lacking in no apparent detail. The Optimizer was tried with a Sony LED TV of only middling HDR brightness, and worked well. Compensation is scalable, too – the HDR Optimizer can set a specific tone map luminance. This is a powerful tool.

A 4K High Precision chroma processor and Multi-Tap filter are employed to interpolate a 4K 4:4:4 video output from 4K 4:2:0 content. This isn't new; Panasonic has had



SPECIFICATIONS

3D: Yes **ULTRA HD:** Yes **HDR:** Yes. HDR10; HDR10+; Dolby Vision **UPSCALING:** Yes. 2160p **MULTIREGION:** No. Region B BD/R2 DVD **HDMI:** 2 x outputs (one audio only) **MULTICHANNEL ANALOGUE:** Yes. 7.1 phono **DIGITAL AUDIO:** Yes. Optical/coaxial outputs **ETHERNET:** Yes **BUILT IN WI-FI:** Yes **SACD/DVD-A:** No/No **DIMENSIONS:** 430(w) x 81(h) x 300(d)mm **WEIGHT:** 7.8kg

FEATURES: 2 x USB ports (one v3.0); HCX image processor; smart portal with streaming video services; DLNA media playback (DSD, FLAC, WAV, AIFF, ALAC, MP3, MKV); HLG compatible; HDR Optimizer; stereo balanced XLR output; HDR-SDR conversion; 4K Chroma Processing

the technology for some years. It's designed to produce a more saturated, yet smooth, response than conventional processing, and works with both UHD discs and network streaming services. A magnified snapshot of a 4K zone plate chroma frequency response test confirms perfectly delineated micro curves, with no coarse stepping. Smooth colour detail, authentic to the source, makes its imagery suitably cinematic.

Vibrancy and HDR pizzazz are class-leading. *Pacific Rim: Uprising* is a gorgeously clean and dynamic UHD disc, with oodles of fine detail and crisp, grain-free visual effects. Played on the DP-UB9000, the action becomes almost mesmerizing. When the rogue Jaeger, Obsidian Fury, first attacks, the deck renders every aspect of the fast-moving fight. I wasn't looking at the picture, I was looking into it.

There's no rattle when loading discs, with Panasonic's heavy-duty mechanism proving smooth and rigid, and disc loading is fast, taking a Java-heavy movie Blu-ray from tray to main menu in 40 seconds.

If the deck does have an Achilles' heel, it's sonic. This isn't a universal disc player, and won't spin Super Audio CD or DVD-Audio – it's CD only. A 768kHz/32-bit AK4493 DAC feeds its two-channel output, and to further help preserve audio integrity there's a dedicated power supply, plus a special circuit board for the analogue audio output that routes left and right channels through a low-noise op-amp to those balanced XLR outputs. There's also an HDMI low-jitter clock process, if that's your preferred option.

Don't get me wrong. CD playback is unquestionably good, even occasionally excellent when fed premium CDs that have been mastered with care. However its character is somewhat acerbic and fatiguing. I began to notice a slight sense of distortion, or buzz, on some harmonics. I'm being pedantic, but only because this calibre of kit deserves it.

The deck is hi-res audio compliant, though, and will handle DSD and 24-bit FLAC files (amongst others). These sound far more fabulous. If your high-res interests lie with files, streaming and Blu-ray Audio discs, the DP-UB9000 doesn't disappoint.

With its beautiful battleship build and excellent video quality, the DP-UB9000 can be considered a steal for the asking price. The provision of extensive video adjustment, with HDR optimisation that offers a real-world benefit and a 4K Chroma processor that paints with supreme artistry, put it at the top of the tree ■

1. The DP-UB9000 ramps up the build quality over previous Panasonic 4K decks

2. Audio outputs are coaxial, optical, balanced XLR and analogue stereo/7.1

HCC VERDICT



Panasonic DP-UB9000

→ £850 → www.panasonic.co.uk

WE SAY: The DP-UB9000 is the 4K Blu-ray player AV-hedz have been waiting for. With multi-HDR support and a build Arnie would be proud of, this is a home cinema dream machine.



With interplanetary build quality and universal disc playback, the UDP-LX800 blows **Steve May** away

Pioneer UDP-LX800

THE PIONEER UDP-LX800 is to Blu-ray players what the Ark of the Covenant is to flatpack furniture; an imposing, grandiose, over-engineered behemoth boasting leading-edge video processing and audiophile chops.

Fully universal, it spins UHD Blu-rays and assorted derivatives, plus SACD and DVD-Audio discs, as well as regular CD platters. If you're after the ultimate in no-compromise disc spinners, then the UDP-LX800 is it.

Formidable springs to mind when it comes to build quality. The deck's construction, with steel-sheet chassis and noise-deadening aluminium side panels, even eclipses Panasonic's premium DP-UB9000 [see p64]. At 13.8kg, it's weightier than many AVRs.

Back-panel connectivity runs to two HDMI outputs (one audio-only); optical and coaxial digital audio outputs; USB; Ethernet; RS-232; and dedicated stereo phono outputs bolstered by a balanced XLR stereo output. There's no multichannel audio bank, however, which might surprise you.

The £2,200 asking price gets you plenty of attention to detail under the bonnet. A six-layered circuit board has been engineered for minimum noise, in order to do justice to

the high-speed signal transmission capability of UHD discs. A three-block layout separates power supply, digital processing and analogue audio to combat electro-magnetic interference. The analogue audio circuit itself has a dedicated 'quick-response' power

transformer with custom-made capacitors. In short, this is as painstakingly built a Blu-ray deck as you could hope to find.

Unfortunately, if there was a prize for UI design, this machine definitely wouldn't win. The home screen is dull and boring, offering just source selection and settings. There is customisation and tuning available, however. The player offers a quartet of picture presets to optimise the HDMI output for display types, with auto detection of SDR and HDR – the UDP-LX800 supports Dolby Vision, as well as regular HDR10 (but not HDR10+).

As with Panasonic's DP-UB9000, the LX800 offers a display information screen including MaxFALL and MaxCLL metadata info from 4K HDR10 discs. It's accessed only by holding the Display button on the remote down for an extended period – a bit of an Easter egg approach for something so compelling.

AV excellence

Image quality with 4K discs is drop-dead gorgeous, without noise and artefacts. I was taken aback by the solidity and dimensional realism of its pictures. Standard BD performance, with upscaling handled by the UDP-LX800, is equally outstanding, with fine, unfettered detail and smooth hues.

It's a matter of conjecture whether the UDP-LX800 is comparable to, or better than, its Panasonic rival when it comes to image quality. Both offer pristine detail. Under the microscope, differences between the two players become slightly more apparent, though. A magnified snapshot of a 4K chroma frequency response test reveals a stepped edge to ultra-fine, curved edges on the big Pioneer. The same content on the Panasonic has no such coarse stepping, and is smoother as a result. But this is a semantic difference.

SPECIFICATIONS

3D: Yes **ULTRA HD:** Yes. **HDR:** Yes. HDR10; Dolby Vision **UPSCALING:** Yes. To 2160p **MULTIREGION:** No. Region B BD/R2 DVD **HDMI:** Yes. 2 x outputs (1 x audio-only) **MULTICHANNEL ANALOGUE:** No **DIGITAL AUDIO:** Yes. 1 x optical digital audio output; 1 x coaxial digital audio output **ETHERNET:** Yes **BUILT-IN WI-FI:** Yes **SACD/DVD-A:** Yes/Yes **DIMENSIONS:** 435(w) x 131(h) x 339(d)mm **WEIGHT:** 13.8kg

FEATURES: Balanced XLR stereo outputs; ESS SABRE ES9026 PRO DACs; 2 x USB; RS-232 control; DLNA media playback (MP3, WMA, ALAC, AIFF, WAV and FLAC to 24-bit/192kHz; DSD 2.8MHz/5.6MHz; AVI, JPEG, MPEG); display screen including MaxFALL and MaxCLL; PQLS (Precision Quartz Lock System) jitter reduction

It's sonically where the UDP-LX800 stands out. This player is second to none, with a character that's refined, musical and detailed.

Its audio design owes much to Pioneer's PD-70AE SACD/CD player. The two decks share an identical PCB stereo signal path and component layout, not to mention the same 32-bit ESS ES9026 PRO Sabre DACs.

Direct function can be used to shut down digital audio and video circuits, to better serve high-resolution sound sources and CDs. When using the stereo analogue stage, you can also select one of three DSP filters (Sharp, Short, Slow) to fine-tune the output to your liking.

The player does a transformative job with high-grade CD pressings. There's no metallic edge, no sibilance, not even the vaguest sense of discord. Even the worst excesses of mass-produced platters are largely tamed.

Ditto for SACD playback. Spinning saxophonist Tommy Smith's modern jazz outing *Blue Smith* (Linn Records) is probably the next best thing to being in the recording studio for a live session. The soundstage has tangible girth, and resolution in reserve.

Indeed, this is exactly the kind of disc spinner that will have you eagerly revisiting library favourites.

Pioneer has produced something uniquely special with the UDP-LX800. This BD beast sets a new standard for build quality and AV performance, combining peerless video replay with sensational sound quality. In fact, I'd argue no UHD player comes close in terms of musical performance, and that includes the Oppo UDP-205. This is unquestionably an audiophile-grade component ■

AV INFO

PRODUCT: Reference grade universal Ultra HD Blu-ray player

POSITION: Flagship, above the UDP-LX500

PEERS: Panasonic DP-UB9000; Oppo UDP-205

HCC VERDICT



Pioneer UDP-LX800

→ £2,200 → www.pioneer-audiovisual.eu

WE SAY: This reference-grade UHD player has no equal. Offering superb video performance and universal audio support, it's sensational.

Sony UBP-X700

As Sony rolls out Dolby Vision on its 4K TVs, it's launched a disc player to match. But does the pared-down spec of the UBP-X700 limit its allure? **Mark Craven** reports



SONY'S UBP-X700 PROMISES improved functionality over its 4K predecessors, yet cuts other corners to hit a new, mass market price point.

It looks very much like a step-down deck. Front on, it's visibly smaller and less domineering than its premium brethren, and the front panel is nondescript. A Sony badge sits on the left-hand edge, a USB input on the right, with acres of black plastic between. There's no display window, just a green power light, and what at first look like soft touch keys for power and eject turn out to be large panels that need to be physically prodded to operate. It's not especially stylish, and it doesn't have that same weight and assurance of build as the UBP-X800. The half-size remote isn't a design classic either, but is nicely responsive.

The back view is equally uninteresting. There are dual HDMI outputs (one audio-only), plus Ethernet and coaxial digital audio sockets (I'd prefer optical), and nothing else.

The absence of analogue audio outputs hints at this player's target audience – film and TV fans after a 4K fix. At the same time, however, the UBP-X700 retains support for Super Audio CD. DVD-Audio, surprisingly added to Sony's player lineup last year, has been left out. Will you miss it, though?

The deck offers wide multimedia support, both over a network and USB. It's ready and willing to play out your hi-res music sources, be they FLAC, WAV or DSD. Yet it doesn't get Sony's Hi-Res Audio certification. Such a badge isn't given

based on format support alone; other aspects, such as player construction and components, come into play.

The UBP-X700 can be bought for around £200. Our sample, however, has been supplied by UK specialist The Perfect Signal (TPS), and is modded for multi-region BD and DVD playback. In this guise, it sells for £350.

Although all Ultra HD Blu-rays are region-free, the case for having a multi-region deck in your AV rack remains strong. Most obviously, there are still countless desirable US releases on Blu-ray (and DVD) that you might fancy spinning, especially from boutique labels such as The Criterion Collection, Shout! Factory and Twilight Time.

More recently, AV hedz have turned to the US for Ultra HD imports, making use of the format's region-free nature, earlier release dates and (in some instances) superior packages. But a UHD purchase can come bundled with a Region A-locked 1080p BD housing all the extra features... The solution? Consider a multi-region deck.

Switching Blu-ray zones here is achieved simply through the remote control, using the red, green and blue keys to choose from Region A, B or C (the old days of secret key codes is a thing of the past). Multi-region DVD playback is automatic.

The headline feature of the UBP-X700 is its support for Dolby Vision, the next-gen dynamic metadata HDR format supported by some 4K Blu-rays. The rival HDR10+ format isn't on the menu though.

Getting to work

The UBP-X700 puts in an assured shift with 4K platters. The excellent image on Paramount's *Daddy's Home 2* carries gorgeous colour vibrancy, rich definition and expansive luminance. When Brad (Will Ferrell) gets his Christmas lights in a tangle with a snow blower

SPECIFICATIONS

ULTRA HD: Yes **HDR:** Yes. HDR10; Dolby Vision **UPSCALING:** Yes. To 4K **MULTI-REGION:** No. Region B BD/R2 DVD (but aftermarket multi-region mod available) **HDMI:** 1 x AV output; 1 x audio-only output **MULTICHANNEL ANALOGUE:** No **DIGITAL AUDIO:** Yes. Coaxial output **ETHERNET:** Yes **BUILT IN WI-FI:** Yes **SACD/DVD-A:** Yes/No **DIMENSIONS:** 320(w) x 45(h) x 217(d)mm **WEIGHT:** 1.4kg

FEATURES: USB port; apps including Netflix, Amazon Prime, YouTube, iPlayer, Demand 5, Spotify; USB and networked file playback; disc tray child lock; screen mirroring

(Chapter 5), this player sniffs out the twinkling highlights. The interiors of the log cabin, meanwhile, are sumptuously detailed.

1080p BDs, upscaled to 4K by the UBP-X700, show no sign of extraneous noise or suspicious image fettling. 1980 slasher *Friday 13th* (BD) seems as grubby as ever, but not unwatchably so; modern Western *Slow West*, with its weirdo aspect ratio, looks clean and solid.

The deck is well-behaved, too. Loading speeds are zippy and it's generally quiet in operation bar the somewhat rattly disc tray (which, usefully, can be 'child-locked' to thwart prying fingers).

A niggle is that Sony's user interface isn't exactly glamorous. There are some rather clunky fonts and it all looks a bit muted and utilitarian. That said, it's an easy environment to move around. The 'Apps' menu provides access to Amazon Prime Video, Netflix, YouTube, Spotify and Mubi, plus BBC iPlayer and Demand 5 – All4 and ITV Player are absent. The setup menus and handset Options key provide access to various noise reduction modes, output resolution, HDR conversion and image tweaks.

First of a new Sony breed

At this price, the UBP-X700 is not *quite* the bargain 4K spinner, although it's certainly stripped back on connectivity and has the same compact, lightweight design as Panasonic's cheaper DMP-UB320. But while some features have gone from its higher-end siblings, the UHD BD performance prowess remains, and the addition of Dolby Vision playback makes it the first step in a new direction for Sony. And in this multi-region guise, you can chuck any disc in it you like. Barring DVD-Audio... ■

AV INFO

PRODUCT: UHD Blu-ray player with Dolby Vision and SACD support

POSITION: Below Sony's X800 and X1000ES decks

PEERS: Panasonic DMP-UB320; LG UP970

HCC VERDICT



Sony UBP-X700

→ £200/£350 (mod) → sony.co.uk / tps.uk.com

WE SAY: Design and build don't dazzle here, and connectivity is limited, but the UBP-X700 has some appealing bonus features.



Optoma UHD51

Optoma hasn't just sliced the price of 4K projection, it's made 3D cool again, argues **Steve May**

IT'S BEEN QUITE some time since I leapt from a cliff and soared through the clouds on the back of a Toruk. But it's as exhilarating today as it was when I first took the plunge in 2009. Back then, James Cameron's *Avatar* was a 3D cinema sensation, but that dimensional euphoria has been hard to recreate of late.

Still, things are looking up. Optoma's low-cost 4K beamer, the UHD51, is part of a new generation to offer 3D compatibility, albeit in 1080p. And it turns out this projector is a grand reminder of just how much fun bigscreen 3D can be.

Smart and compact

Design-wise, the UHD51 should be easy to accommodate. It's smart and compact, and relatively light too, at 5.22kg, so ideal if you want to install it on a shelf or ceiling mount.

It's an easy PJ to get to grips with. Optoma offers a great-looking graphical interface, and there's an internal test pattern generator to ensure sharpness and linearity. Zoom and lens shift (vertical) are managed manually.

There's a variety of SDR viewing presets but to be honest there's not a huge amount of difference between them, certainly compared to the differences you might see between presets on a TV display. With Blu-ray/TV content the Cinema mode

became my go-to default, and it's actually quite atypical for a Cinema mode, being punchy, with clean, uncoloured whites and excellent colour.

The UHD51's lamp brightness has just two settings, Eco and Bright. The former extends the life of the lamp to a claimed 10,000 hours, but more significantly drops the operating noise of the projector down. There is a visual consequence though. Watching animated sequel *Kung Fu Panda 2* (BBC Two HD), the white feathers of Master Crane lose a little of their luminance when you switch to Eco. The picture still has a high level of 'snap', though, and you probably wouldn't notice the difference without an A/B comparison.

The PJ's six-segment colour wheel covers 100 per cent of the REC.709 colour space. This unit doesn't therefore support wide colour as used on UHD discs, instead downconverting to the standard currently embraced by TV and vanilla Blu-ray. This isn't a major issue. The palette of *Kung Fu Panda*, within a REC.709 container, is ferociously lush. A journey by our rotund hero into a perilous pagoda is bathed in all shades of red, but the image is never noisy.

DLP's trademark clarity is evident in both HD and Ultra HD sources. Its pin-sharp accuracy is superb. Refreshingly, I didn't experience any rainbow flicker, either. I found the picture smooth and coherent, and largely immune from contrast-induced artefacts.

For raw detail and naturalistic texture, the gritty North London drama *Save Me* (Sky Atlantic 4K) has much to offer. The forlorn inner-city estate exhibits a wealth

SPECIFICATIONS

3D: Yes. Active 3D **4K:** Yes. 3,840 x 2,160
HDR: Yes. HDR10 **CONNECTIONS:** 2 x HDMI inputs; PC VGA input; 3.5mm audio input; 3.5mm audio output; optical digital audio output; USB (powered); 12V trigger; RS-232; Ethernet **BRIGHTNESS (CLAIMED):** 2,400 Lumens **CONTRAST RATIO (CLAIMED):** 500,000:1 **Zoom:** 1.3x **DIMENSIONS:** 392(w) x 281(h) x 118(d)mm **WEIGHT:** 5.22kg

FEATURES: XPR single-chip DLP design; 5W built-in audio; 4,000-hour claimed lamp life (Bright mode), 10,000 hours (Eco mode); 25dB fan noise; 3D playback at 1080p24; 1.21:1-1.59:1 throw ratio; vertical lens shift; ISF modes; PureMotion frame interpolation

of detail, and there's a preponderance of emotive close-ups to convey the drama. The imagery is quite striking.

Black level performance is good enough. It's probably unreasonable to expect a low-cost projector like this to be able to differentiate the same level of shadow detail as an OLED screen, but it certainly has no problem differentiating between 0 and 10 per cent black on a greyscale. Use of the supplied Dynamic Black tool is largely down to taste. I preferred it Off on this model, however some might like the denser blacks it produces.

Playing *Transformers: Revenge of the Fallen* (Ultra HD Blu-ray) rewards with a nice sense of HDR dynamism. This PJ doesn't mute the image in an attempt to fake highlights; sparks and explosions generate genuine peaks. The Optimus Prime forest face-off also provides a stunning example of the blistering clarity the UHD51 is capable of.

Image smoothing is offered in the form of PureMotion processing. This is actually quite benign in operation (which is a good thing), and irons out horizontal panning judder. I'd recommend keeping PureMotion Low for movies and TV content, but experimenting with High for sports.

And then there's the surprise star turn. Optoma's UHD51 will project 3D in 1080p and it looks glorious. Images exhibit extreme depth with minimal crosstalk. There are no 3D glasses supplied, so you'll need to invest in a pair of Optoma's ZD302 DLPLink spex. But it's worth the expense.

Brilliantly priced, a rock-solid performer and with enough setup flexibility not to make installation a chore, Optoma's UHD51 shakes up the home cinema projection market. 4K has relegated Full HD to the cheap seats ■

HCC VERDICT



Optoma UHD51

→ £1,400 → www.optoma.co.uk

WE SAY: Optoma doesn't cut corners with this entry-level UHD/3D hero. Images are sharp, colour-rich and dynamic.

AV INFO

PRODUCT: Lamp-based 4K HDR DLP projector

POSITION: Middle of Optoma's growing 4K stable

PEERS: BenQ W1700; Acer V7850; Vivitek HK2288

Sony VPL-VW270ES

Sony has kicked off its latest 4K projector lineup in style, decides **John Archer**



HOME CINEMA
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AFTER HAVING THE 4K projector space pretty much to itself for a few years, times have got tougher for Sony's projection division. We're now seeing models certified for 4K playback (using DLP's rapid mirror-switching technology) selling for as little as a £1,000, and JVC is launching sub-£10,000 native 4K projectors, having first aimed for the very high-end with its £35,000 laser-based DLA-Z1.

Sony's impressive new VPL-VW270ES – it's entry-level 4K PJ, albeit priced £5,000 – suggests that the brand isn't feeling fazed by all the extra competition, and is sticking with its UHD projection game plan.

There's no compromise in build quality and design. The VPL-VW270ES still enjoys a robust, metallic finish, and is actually a touch bigger – specifically, taller – than previous Sony mid-range and entry-level PJs. But it still looks domesticated thanks to its rounded and arced top edge.

The connections tucked under the projector's right side are an improvement on those found on any previous entry-level Sony 4K projector. The two HDMI inputs now support full-bandwidth, 18Gbps 4K HDR images at 60fps.

The projection engine is built around

three of Sony's native 4K (actually 4,096 x 2,160) SXRD projector chips, and there's support for HDR10 and HLG HDR. A 225W lamp apparently delivers 1,500 Lumens maximum light output, but Sony doesn't provide any contrast ratio specifics. Setup is relatively easy; the PJ's zoom, optical image shifting and focus systems are all motorised and accessed by the large, logical and backlit remote control. The zoom extends to 2.06x, making the projector nicely flexible.

As expected, the VPL-VW270ES introduces more than just improved HDMI connectivity compared to the previous VPL-VW260ES. A new HDR Reference mode, for instance, tries to deliver accurate saturations of colours right up to the 1,000 nits of peak brightness used by many HDR sources, rather than 'rolling off' below 1,000 nits, as happens in the unit's other HDR modes. Also new here is a 4K version of Sony's Motionflow processing for reducing judder; an Input Lag reduction mode for gamers that reduces the time the PJ takes to render pictures to 30ms; and anamorphic lens compatibility for 4K signals.

Getting the best from HDR sources will mean revisiting some of the menus more often than you might want. In particular, I'd recommend setting HDR Contrast to 77 for 1,000-nit sources, and nearer 90 for 4,000-nit encodes. And that's assuming you know what brightness level an HDR source is mastered to.

This beamer is a significant step forward from the VW260ES. When it comes to dark

SPECIFICATIONS

3D: Yes. Active (although glasses are an optional extra) **4K:** Yes. 4,096 x 2,160 resolution **HDR:** Yes. HDR10; HLG **CONNECTIONS:** 2 x HDMI inputs; RS-232; USB service port; 12V trigger; IR input; Ethernet **BRIGHTNESS (CLAIMED):** 1,500 Lumens **CONTRAST (CLAIMED):** N/A **Zoom:** 2.06x **DIMENSIONS:** 496(w) x 205(h) x 464(d)mm **Weight:** 14kg

FEATURES: SXRD projector; 6,000-hour claimed lamp-life in Low lamp mode; 4K anamorphic lens support; Motionflow motion processing; optical image shifting (vertical +85%/-80%; horizontal +/-31%); Reality Creation processing; HDR Reference mode; HDR contrast adjustment; 1.38-2.83:1 throw ratio

scenes, it handles the gorgeous blackness of space in the new *2001: A Space Odyssey* 4K Blu-ray with more authority and black level depth than its predecessor, and does so without having compromised its brightness at all. On the contrary, since its peak light levels seem around the same as those of the VW260ES, while black levels are deeper, its imagery feels consistently more contrast-rich. The dynamics of *2001...*'s space sequences are presented with panache.

It also responds better than expected to the *2001...* 4K Blu-ray's expanded colour palette. No projector – especially a non-laser model – can get close to the full colour range contained within HDR sources. But through its brightness and contrast adjustments with HDR, and Sony's Triluminos colour system, it does give a gentle but engaging HDR push.

And, crucially, this slight colour expansion is handled superbly by Sony's processing; tones look impeccably natural across the board, from Dave's subdued skin tones to HAL's sinister red eye and the famous, psychedelic inter-dimensional 'tunnel'.

Native 4K detailing is breathtaking. Budget 4K DLP rivals achieve resolutions that look comfortably in excess of HD, but the extra crispness, texturing and purity of these images is undeniable.

Contrast-rich scenes can lack pop versus brighter projectors – and black levels can sometimes look a bit grey – during HDR playback. Fan noise is more noticeable with HDR too. But the VPL-VW270ES's good points hold comfortable sway over its niggles. This is a real 'destination' product for resolution-hungry home cinema fans ■

AV INFO

PRODUCT:
Native 4K and HDR projector using Sony SXRD technology

POSITION:
The entry-level model in Sony's new 4K projector range

PEERS:
Optoma UHD65; JVC DLA-X5900

HCC VERDICT



Sony VPL-VW270ES

→ £5,000 → www.sony.co.uk

WE SAY: Although it will face stiff competition from pricier rivals, the VPL-VW270ES is a brilliant 4K HDR performer.

BenQ TK800

BenQ's affordable 4K HDR projector is ridiculously good for its money, reckons **John Archer**



THE WAVE OF affordable 4K projectors just keeps on coming – I now find myself lapping up an impressively talented 4K HDR (and 3D) projector from BenQ that costs just £1,000. At that price, anyone clinging on to a Full HD model may be tempted...

While it seems like a bit of a star on paper, it doesn't really look like one. It's far from ugly with its matt-white body, rounded edges and quirky blue fascia, but there's nothing about it that really shouts 'cutting edge'. At least at only 35cm wide it doesn't take up too much space, and its insignificant weight (4.2kg) makes it ripe for ceiling/bookshelf mounting.

The TK800's connections deliver the first hint of 4K action, with one of its two HDMI's supporting 4K HDR playback. Other ports include a 12V trigger, RS-232 control jack, VGA PC input and audio in/out options.

The projector's image specifications are where things get really interesting, particularly its claimed peak brightness of 3,000 Lumens. That's a huge figure by affordable movie PJ standards.

The TK800 doesn't carry a native 3,840 x 2,160 set of DLP mirrors, but can manipulate its mirrors fast enough to deliver two pixels from each one for every image frame. This, in conjunction with proprietary Texas Instruments

processing, delivers a 4K effect that's hard to distinguish from native 4K.

BenQ talks rather vaguely about a trio of HDR-based processes designed to retain more brightness, shadow detail and natural colour tones than HDR models customarily provide. Despite the lack of detailed info, though, it's clear that these HDR features aren't just marketing hot air. Even when fed an aggressively mastered HDR film, such as *Mad Max: Fury Road* on 4K Blu-ray, the TK800 rises to the challenge remarkably well.

Scenes towards the start of *Fury Road* where Max is detained in dark caves and tunnels benefit from deeper, more natural black levels than I've seen on other sub-£1,500 4K units. As well as making such sequences look more immersive and convincing, this black level prowess (by budget HDR PJ standards) lets you see more background details. Also, colours in dark scenes look richer and more intense with decent black levels to 'bounce off'.

Stick with the PJ's adaptive Smart Eco lamp mode, and those surprisingly effective black levels can be joined by some strikingly punchy bright highlights. The shot of Max imprisoned in a hanging cage, brightly lit against a darkened cave, looks far more impactful and dynamic in HDR than it does in SDR.

BenQ's nifty light management delivers a taste of HDR's advantages without the picture becoming unbalanced; it's not too dark, too short of shadow detail, or too peaky with its colours. In fact, far from feeling like a compromise, the TK800's HDR images often

SPECIFICATIONS

3D: Yes. Active **4K:** Yes. 3,840 x 2,160 (via TI's XPR technology) **HDR:** Yes. HDR10 **CONNECTIONS:** 2 x HDMI inputs (one 4K-capable); 12V trigger; 3.5mm audio input and output; RS-232; VGA PC port; USB (service); USB (powered) **BRIGHTNESS (CLAIMED):** 3,000 Lumens **CONTRAST (CLAIMED):** 10,000:1 **ZOOM:** 1.2x **DIMENSIONS:** 353(w) x 135(h) x 272(d)mm **WEIGHT:** 4.2kg

FEATURES: Single-chip DLP projector; 5W built-in speaker system; 4,000-10,000-hour claimed lamp life; 33dB maximum claimed fan noise; 1.47-1.76:1 throw ratio; manual focus/zoom control; Bright, Vivid, Cinema, Sport, Football and User image presets

deliver genuine 'wow' moments. Good stuff, considering the asking price.

Superheroic sharpness

This budget beamer also excels with 4K clarity. The pristine images of *Black Panther* (4K Blu-ray) are projected with superheroic sharpness and crispness. This clarity remains generally intact during scenes filled with fast motion, thanks to some blur- and fizzing-free motion handling. There's a touch of judder in camera pans during the film's final battle, but motion within the frame generally looks fluid.

The TK800 does, inevitably, have limitations. You can get better black levels on similarly priced HD/SDR models, for instance. Also, while its enhanced colours outperform rival HDR PJs, *Fury Road*'s deserts can look a little radioactive, and its skin tones slightly orange. There's occasionally some noise in colour blends, too.

These all feel, though, like small prices to pay for the extent of the TK800's 4K clarity and HDR enhancements – and it delivers its high brightness without suffering heavily with DLP's rainbow effect, or kicking out too much in the way of cooling fan noise.

3D playback is efficient too. Crosstalk ghosting noise proved pretty much non-existent, the 3D effect is convincing and subtle, black levels look remarkably good, and the TK800's exceptional light output means that 3D visuals don't look starved of brightness. Nor is there any sign of the red tint that once affected BenQ's 3D efforts.

Add in a reasonable performance by the PJ's in-built 5W speaker system and I'm baffled as to how the TK800 can do so much for so little ■

AV INFO

PRODUCT:
Budget 4K HDR
DLP projector

POSITION:
Currently BenQ's
most affordable
4K model

PEERS:
Optoma UHD51;
Acer V6810

HCC VERDICT



BenQ TK800

→ £1,000 → www.benq.co.uk

WE SAY: You'll be surprised that a £1,000 4K projector can pump out pictures – both HDR and SDR – as good as this. And it's solid with 3D, too.

Epson EH-TW7400

It looks and performs like a high-end PJ, but Epson's EH-TW7400 appeals to **Steve May's** wallet too



ONE OF TWO new Epson models dubbed 'Pro UHD' (perhaps optimistically, given that they're not native 4K), the EH-TW7400 is the entry point for this new appellation, and a replacement for last year's EH-TW7300.

Built around Epson's stock-in-trade 3LCD image engine, this projector offers more brightness and greater contrast than its predecessor. It claims a dynamic contrast ratio up to 200,000:1, and uses pixel-shifting wizardry to present a 2160p image.

Connections include two HDMI inputs, but only one is blessed with HDCP 2.2 copy protection for use with UHD sources. 4K/60p 18Gbps transmission is off the menu too, nor is HLG playback supported (these features are reserved for the step-up EH-TW9400). Other ports are USB, VGA, RS-232 and Ethernet. A 12V trigger is provided for screen control.

For setup the EH-TW7400 has a premium edge. A 2.1x optical zoom, powered focus and powered lens shift mean you can line the image up and snap it perfectly into focus with just the (backlit) remote. The throw ratio of 1.35-2.84:1 is also expansive. For advanced theatre installs, there are ten memory slots to store different screen aspect ratios.

AV INFO

PRODUCT:
3LCD 4K Enhanced projector

POSITION:
The first of Epson's Pro UHD models, positioned beneath the EH-TW9400

PEERS:
Acer V6820i;
Optoma UHD51

Lush LCD

Image quality here is tremendous. I don't mind admitting that I'm a fan of 3LCD. Single-chip DLP projectors may have the edge when it comes to absolute sharpness, principally because there are no alignment issues, but 3LCD isn't subject to rainbow fringing, and colour fidelity tends to be excellent.

Picture presets are Dynamic, Bright Cinema, Natural, Cinema and Digital Cinema. I found the Cinema mode too dull for most source content, but Natural, Digital Cinema and Bright Cinema all provide satisfactory jumping off points for movie and TV shows.

Given the PJ's sleight-of-hand processing, just how convincing is its UHD presentation? Well, when fed native 4K resolution tests, the projector's pixel-shifting delivers a surprising simulacrum. I noted some twitching artefacts with high-frequency detail, but on non test-chart material this wasn't an issue. Sky One cop show *Bulletproof* (UHD) looks crisp and cinematic; colour handling is lush, and there's no shortage of detail and gloss.

To evaluate HDR I looped the opening scene of *The Dark Tower*, one from 4K Blu-ray, the other 4K SDR from Sky Q. There were differences, but not how you might imagine.

The Stephen King adaptation opens with kids playing in a sunlit field surrounded by chalets; a blue sky with white clouds reveals two moons. There's no overt shortage of pop in either the Sky or 4K disc image, however the HDR picture reveals better black level detail and contrast. An aerial shot confirms superior

SPECIFICATIONS

3D: Yes. Active 3D (glasses optional) **4K:** Yes. 2160p via 4K Enhancement **HDR:** Yes. HDR10 **CONNECTIONS:** 2 x HDMI inputs; VGA input; RS-232; Ethernet; 12V trigger; USB **BRIGHTNESS (CLAIMED):** 2,400 Lumens **CONTRAST (CLAIMED):** 200,000:1 **Zoom:** 2.1x **DIMENSIONS:** 520(w) x 193(h) x 450(d)mm **WEIGHT:** 11.2kg

FEATURES: 3LCD technology; lamp life rated at 5,000 hours (eco)/3,500 (dynamic); fan noise rated at 20dB (economy); Dynamic, Bright Cinema, Natural, Cinema and Digital Cinema picture presets; 1.35-2.84:1 throw ratio; frame interpolation; motorized zoom/focus; vertical/horizontal lens shift; ten-position lens memory; HDCP 2.2

delineation of the sunlit grass. A kid in a striped tee-shirt looks up. His face, half in shadow, has almost photographic depth, cheek bones and hair clearly defined with subtle shadow detail. The Sky Q SDR presentation has a slightly higher, uniform average picture level, with the result that the same face doesn't have the same naturalistic look. In every scene, the Epson found and displayed more near-dark detail from the HDR disc, without sacrificing bright highlights.

To help maximise detail in sports content, etc, the projector offers frame interpolation. However, image smoothing doesn't appear to work with 4K material. And if your source is upscaling HD to 2160p, it won't work either.

Interpolation is available in Low, Normal or High flavours. In Low there are no motion artefacts, while pans are smooth but blurry. Both Normal and High introduce obvious motion artefacts, but do increase the levels of image detail retained. So of the options, Low is the better choice. That said, I'd opt to leave my sources outputting 4K (native/upscaled) and sacrifice Epson's interpolation tool.

Running noise is pleasingly low. In Eco the EH-TW7400 purrs quietly, and wouldn't draw attention when surrounded by sound. However, opt for Dynamic mode, and you'll trigger a commensurate increase in fan noise.

A total treasure

For the cash, the EH-TW7400 is in many ways an absolute belter. It delivers bright, contrasty images with stable black levels and a pixel density that, while not offering the same level of clean detail observed on native 4K PJs from Sony, is gloriously cinematic. This is a proper home theatre projector at a sensible price ■

HCC VERDICT



Epson EH-TW7400

→ £2,200 → www.epson.co.uk

WE SAY: Offering 2160p pixel density and better than HD resolution, this big Epson is fabulously filmic. A largescreen thriller.

REL HT/1205

REL's new Serie HT dedicated home cinema subwoofer range gets a big boost with a big brother. **Richard Stevenson** meets the 500W, 12in HT/1205



YOU COULD HEAR a sharp intake of breath from subwoofer aficionados when REL announced its home theatre-centric Serie HT. Gone was the signature REL high-level input, long considered a USP of the brand's product stable. So what was on offer? A simple filter network, a budget finish and a promise to deliver a big bang for very few bucks.

I rather liked the entry-level HT/1003 [see HCC #286]. At just £500, its punchy 300W Class D amplifier, 10in CarbonGlas woofer and compact sealed cabinet brought home the value LFE bacon.

Scaling the design into a larger cabinet, boosting power to 500W and deploying a 12in driver is an obvious step up. This is what REL has done with its HT/1205, which comes to the table at just £700.

Tipping the scales at just shy of 20kg,

the HT/1205 is no lightweight, and its 40cm cubic shape, textured vinyl wrap and shiny top-plate make for a serious yet understated aesthetic.

Custom designed by REL, the front-facing 12in CarbonGlas cone is said to be super-light and super-rigid. Those are the magic ingredients for fast transient

attack and a tight sound. The soft butyl rubber roll-surround is a REL hallmark, offering long-throw excursion while remaining flexible for donkey's years.

The sealed cabinet design adds back-pressure to the cone movement, further keeping the output drum-tight but lacking the port-assisted bass gain of open designs. That is overcome by throwing power at the problem.

The 500W Class D amplifier here is also a REL design, dubbed NextGen5, and said to be cool-running and compact enough to allow for plenty of internal cabinet volume. The upshot is a claimed 22Hz (-6dB) frequency response and the ability to go party-loud. 'Warn the neighbours,' suggests the company.

Compared to more traditional RELs, the HT/1205's rear panel looks near-deserted. There are just two switches (On/Off/Standby, and 180-degree phase), and knobs for level and crossover. Inputs are just two phonos with unfiltered loopthrough, although REL's funky little HT-Air unit will give you wireless connectivity for a further £100.

Scarlett fever

Cutting to the chase (scene), the HT/1205 delivers an astonishing level of home cinema thunder for the money. If you want big LFE without dipping into four-figure sub territory, this is a smart place to look. On the flip side, the HT/1205 was clearly playing hooky the day subtlety circuits were being handed out.

SPECIFICATIONS

DRIVE UNITS: 1 x 12in CarbonGlas long-throw bass driver **ENCLOSURE:** Sealed **FREQUENCY RESPONSE (CLAIMED):** Down to 22Hz (-6dB) **ONBOARD POWER (CLAIMED):** 500W Class D amplifier **REMOTE:** No **DIMENSIONS:** 376(w) x 405(h) x 399(d)mm **WEIGHT:** 19.2kg

FEATURES: 2 x LFE line-level inputs; 2 x loopthrough outputs; 180-degree phase switch; automatic standby option; compatible with REL HT-Air Wireless transmitter; NextGen5 amplification; feet threaded for spikes

With Scarlett Johansson diving into the Dolby Atmos-fuelled festival opening fight sequence in *Ghost in the Shell* (Blu-ray), the HT/1205 is in its element. Gunfire thumps into your chest with a percussive feel and the subwoofer never seems to lose its grip even at serious volumes. My main speakers went into HF compression long before the HT/1205 was done, inspiring some enthusiastically LFE-biased level-matching on my AV rig.

That in itself led to seeking out *The Expendables 3* on Blu-ray. I love the dockyard scene where our heroes see Stonebanks (Mel Gibson) for the first time. Gunfire from ten different types of weapon (including a rocket launcher), explosions and toppling cargo containers see the LFE channel on fire and the HT/1205 does not disappoint. It is fearsomely dynamic with a sledgehammer punch around 50Hz-60Hz that can take your breath away. It's taught rather than boomy and delivers bass fun in spades.

The escape sequence in *Skyfall* (Blu-ray) shows up the HT/1205 as a little gung-ho for subtler effects. The low bass beat throughout the beginning is designed to replicate Bond's rising heartbeat as he realises Silva has escaped. By the time 007 is running through the tube station, the beat is a fast-tempo rhythm. Here, the HT/1205 lacks the refinement of woofers like REL's own T7i [HCC #277] and the LFE is a little more 'one-note' than ideal. Backing down the gain softens the effect, but also robs the HT/1205 of some of its visceral edge when the action starts.

Perhaps I'm guilty here of demanding too much, though. Despite its absence of true LFE subtlety, there should be no doubt that the HT/1205 is a bass-making bargain, and it offers a notable upgrade over the smaller HT/1003 for just £200 more ■

AV INFO

PRODUCT: 12in, 500W sealed cabinet subwoofer

POSITION: Above REL's HT/1003, below the T7i

PEERS: KEF Kube12b; REL T7i; Elipson Prestige Facet SUB10

HCC VERDICT



REL HT/1205

→ £700 → www.rel.net

WE SAY: Enormously powerful for the cash, REL's neat-looking HT/1205 delivers outstanding bang per buck, but don't expect too much subtlety.



SPECIFICATIONS

DRIVE UNITS: 1 x 13.5in forward-firing composite cone woofer **ENCLOSURE:** Sealed **FREQUENCY RESPONSE (CLAIMED):** 19Hz-310Hz (+/-3dB) **ONBOARD POWER (CLAIMED):** 1,200W (4,000W peak) from Sledge amplifier **REMOTE CONTROL:** Yes **DIMENSIONS:** 453(w) x 465(h) x 471.3(d)mm **WEIGHT:** 46.4kg

FEATURES: Stereo line-level input; stereo line-level output; LFE input; stereo XLR input; stereo XLR output; 12V trigger; variable phase control; Analog Devices DSP; SVS Bluetooth app (with parametric EQ, room gain compensation, etc)

SVS SB-4000

SVS's heavy-duty SB-4000 subwoofer partners a large driver and 1,200W amp with intelligent operation. **Ed Selley** tries his hardest to ruffle its feathers

THE MARKET FOR heroically powerful subwoofers seems to have legs at the moment, and new arrivals are turning up all the time. The 4000 Series, from American brand SVS, is part of the wave. A replacement for its long-running '13' models, it's available in sealed, ported and cylinder forms and the SB-4000 tested here – the sealed version – is once again the smallest member of the family. Not that it's actually 'small'.

One thing that remains unchanged from the preceding model is the driver size. This is still 13.5in, with a twin-magnet assembly that weighs nearly 20 kilograms on its own. It uses an edge-wound voice coil to better apply power to its stiff, lightweight composite cone, with a heavy-duty gasket and long-throw surround aiming to keep it healthy and

maximise excursion.

Power comes courtesy of a Sledge amp (1,200W) – a combination of Class D amplifier with a discrete output stage in a manner akin to a traditional Class AB design.

Where the SB-4000 is significantly different than its predecessor is

with its control interface, which is more closely related to the SB16-Ultra/PB16-Ultra models released in 2017. So gone are the knobs and dials on the rear panel, replaced by a menu-driven control system that sets crossover, phase (which can be set in one degree increments) and DSP settings. To further help with this, the subwoofer's front panel now includes a display to give you feedback on the setting engaged at the time, and a remote control is also supplied – although it's rather small and potentially easily lost.

The user experience is then boosted by a Bluetooth-based control app that allows you to tinker with the settings of the SB-4000 from your listening position rather than peering over the back of it. I found the iOS version of the app to be more stable, and it connected instantly. The Android iteration, however, proved a little less willing to get going.

Build quality is superb, and the sub looks rather fetching, even if the metal grille is a little on the industrial side. The chassis is MDF, and some parts of it are two inches thick, leading to a weight of 46kg.

Cruising for a bruising

The acid test of subwoofery, those sensational opening notes of *Edge of Tomorrow* (Blu-ray), are delivered by the SB-4000 as genuinely subsonic, and its room-loading capabilities prove outstanding. Moving onto the initial

beach landing sequence, the experience is every bit as visceral as you might expect from a 13.5in, 1,200W woofer, with bass effects delivered with the same clean and deep force that was present from the movie's beginning.

What becomes apparent is that this sub is not simply in the business of rattling internal organs. The power available is harnessed in such a way as to be almost delicate at times. The undercover cop shootout sequence in *Baby Driver* (Blu-ray) never loses the musicality built into the scene, while serving up gunfire that you can feel as well as hear. SVS's driver starts and stops with impressive speed for something as large as it is.

Regardless of what you choose to play on it, the SB-4000 is near impossible to unsettle. The potent rumble of the kill droid in *The Incredibles* (Blu-ray) is absolutely superb. The sound here again is more about being felt rather than heard, but there are fine details of its movement to pick out.

My only criticism of the way the SB-4000 behaves is slightly odd. This is a superbly controlled sub, aided by some clever DSP, but there are times when I'd love to be able to make it a little more boisterous. Compared to the GoldenEar SuperSub XXL [see HCC #274], which can be persuaded into great hulking slabs of unnecessary low-end if you ask it nicely, the SVS stays absolutely controlled. I'd almost like there to be a 'Ludicrous' setting in the SVS Bluetooth app (to join the Music and Movie presets).

Criticising a piece of peerless engineering for being a bit too well engineered is somewhat irrational, though. What the SB-4000 delivers is almost the textbook definition of great home cinema bass; deep, clean and fast, and easily integrated with your chosen speaker system ■

AV INFO

PRODUCT: Active subwoofer with 13.5in driver

POSITION: Sealed version of the 4000 Series, below 16-Ultras

PEERS: GoldenEar SuperSub XXL; B&W DB3D

HCC VERDICT



SVS SB-4000

→ £1,800 → svsound.com / karma-av.co.uk

WE SAY: We might want it to be a bit rowdier at times but the SB-4000 is a peerless bass generator and hugely accomplished.



Samsung HW-N950

The HW-N950 Dolby Atmos soundbar ups the feature specification from its K950 predecessor.

Richard Stevenson unleashes a thunderstorm in his media room

AV INFO

PRODUCT:
7.1.4 Dolby Atmos
soundbar system

POSITION:
Tops the 2018
Samsung lineup

PEERS:
LG SK10Y;
Sony HT-ST5000;
Yamaha YSP-
5600SW

WE WERE HUGE fans of Samsung's HW-K950 soundbar, launched in 2016. Leveraging the sonic expertise of a new audio R&D facility, it did Dolby Atmos in 7.1.4 and wowed our ears with every movie. Yet it missed some out-of-the-box features, such as DTS:X support. Meet the HW-N950...

Coming in at £1,500, the HW-N950 is again a serious, home cinema-centric proposition, comprising the main soundbar, wireless sub, and two wireless rear speakers.

At 1.23m long, the 'bar matches up neatly to most 55in screens but looked equally at home under my 65-inch. The styling is more innocuous than flamboyant, featuring a steely dark-grey chassis with metal grille, and a subtle blue display (on the far right) that goes off after a few seconds. What's on the inside of the 'bar is a whole lot more thrilling.

There are 13 drivers with 13 amplifiers, rated in total at over 200W. Facing front are left, right and centre channels, each sporting two midrange drivers and Samsung's second-generation wide-bandwidth tweeter. While this

new version doesn't crossover to the mids at quite such a low frequency (700Hz compared to 400Hz on the K950), it's 700Hz-20kHz bandwidth comes with 3dB more gain and an extremely wide dispersion pattern. That should afford a much greater sweet spot across the front soundstage and indeed your sofa.

Surround duties are handled by drivers positioned in the bar's end panels, designed to bounce their output off side walls and onwards to your ears. On the top face are two upfiring drivers for front Atmos/DTS:X overhead sound. These likewise project up and out from the bar, reflecting the sound from the ceiling so that audio is perceived as coming from above. The two wireless rears have drivers for surround back channels and upward-facing units for rear overhead information.

With the wireless subwoofer, a 160W amp drives an 8in driver mounted on the right side of a compact, rear-ported cabinet. It's a solid, nicely built box, if not one of great visual



merit. A potential issue with placement is that the driver and rear port need a bit of space, so can't be pushed up tight to walls or cabinets.

Ready, set, tweak

Samsung's familiar remote handles the bar's basic setup, input selection and level adjustment with info scrolling across the short display. Slicker control can be had through the SmartThings app, which is a further improvement over last year's already pretty cool Samsung Connect. If you have a recent Samsung TV and link the HW-N950 you can throw away one remote control as they operate together pretty much as one item.

Without the benefit of a Samsung TV, setup was a little trickier than anticipated. Connecting the TV to the HW-N950 via Wi-Fi, Bluetooth and ARC over HDMI is all possible but I had to make several attempts and twiddles with settings, and remove a rogue HDMI cable from my system that proved unable to pass a 4K HDR signal.

It's worth it though, as the HW-N950 delivers solid-gold home cinema magic. That is particularly true of Samsung 'Smart' sound mode that subtly adjusts EQ relative to the content playing.

Kicking off with Dolby's Atmos test clips, simply to ensure it was firing on all channels, was a jaw-dropping, pinch myself, 'this is a soundbar' moment. The Atmos effects were accurately located around the room and the sound had immediacy and the sort of projection and solidity I would expect from a multichannel speaker setup. And even in my decent-sized lounge (6m x 5m), the HW-N950 sounded largescale and authoritative, with plenty of headroom for high-volume listening.

The opening of Dolby's *Amaze* clip sees the Samsung render a beautifully encompassing rain-forest ambient, complete with insect noises in all corners of the room. The sense of space is tangible as a bird flies high around the

SPECIFICATIONS

DRIVE UNITS: 8 x midrange, 3 x wide dispersion tweeters and 2 x upfiring Atmos units (soundbar); 1 x midrange and 1 x upfiring Atmos unit (each rear)

AMPLIFICATION (CLAIMED): 350W total **CONNECTIONS:** 2 x HDMI inputs; 1 x HDMI (ARC) output; optical digital audio input **DOLBY TRUEHD/DTS-HD MA:** Yes.

Plus Dolby Atmos/DTS:X **SEPARATE SUB:** Yes. 8in driver, 160W amp **REMOTE**

CONTROL: Yes **DIMENSIONS (SOUNDBAR):** 1,226(w) x 83(h) x 136(d)mm **WEIGHT (SOUNDBAR):** 8.8kg

FEATURES: Wireless rear speakers and subwoofer; SmartThings app control; 7.1.4 soundstage; auto-optimised Smart mode; remote control sync with Samsung TVs; 4K HDR passthrough; UHQ 32-bit upscaling; Bluetooth; network audio streaming

listening position. The rear speakers have a rare richness to them that most add-on soundbar rears lack; the lightning effect and rain patter shows this off well, creating believable atmospherics in 360 degrees and plenty of information from above. Low, rumbling thunder lets the sub come to the fore, with an also-rare combination (among soundbar subs at least) of bass depth and LFE tautness.

Moving on to *The Matrix* (Dolby Atmos, UHD BD), those classic demo scenes from back in the day sound better than ever. The foyer shootout is a cacophony of razor-sharp gunshot effects, thumping music and splintering marble, and the N950 doesn't gloss over anything. The main 'bar produces a very wide soundstage and the front overheads fill in above. It's solid, accurate and entertaining.

Perhaps due to the outstanding performance with native Atmos and even Dolby Digital 5.1 audio, the HW-N950's attempt to upscale broadcast stereo to multichannel sounds a little underwhelming in comparison. It's a reasonable effect and adds scale and surround, but sticking to two-channel-plus-subwoofer feels more accurate and engaging. You may not be making full use of the whole package, but as a system for music, the HW-N950 can present a stereo tune with convincing aplomb. Hi-res FLAC, ALAC, AIFF and WAV files are supported.

A few weeks on test saw some tweaks in terms of speaker positioning. Moving the Samsung's rears a little further out from room walls delivered a most compelling overhead experience. I also ended up using +3 gain on all upfiring channels to really hammer home the overhead layer. In a different room, your mileage might vary.

Getting the soundbar off the heavy table it was initially placed on also helped add extra girth to the front soundstage and improved dialogue intelligibility. If I was living with the 'bar I would probably want to wall-mount it under my display.

Class-leading

The HW-N950 is a triumph from Samsung, and the best premium soundbar I've heard to date. It's a compelling buy even at £1,500; its stellar performance rivals a traditional AVR and speakers at the price. Yes, it's a little fiddly to set up, and three HDMI inputs would be better than just two, but if you want the class-leading home cinema soundbar of the day, the HW-N950 is it ■

1. The HW-N950 partners subwoofer and soundbar with rear speakers

HCC VERDICT



Samsung HW-N950

→ £1,500 → www.samsung.com/uk

WE SAY: Stunningly effective Atmos/DTS:X soundbar package with a home cinema performance to rival a good AV receiver and speakers.

JBL Bar Studio

The entry-level Studio soundbar delivers an impressive performance from a single box and an agreeable price point, reckons **Mark Craven**



FROM THE SAME range as JBL's multichannel-capable Bar 5.1 [see HCC #283], only less ambitious, comes the Bar Studio. A subwoofer-free, 2.0-channel design aimed at mid-size flatscreen owners, it sells for around £100, meaning it joins an already crowded market of budget 'bars.

Aesthetically, it's very clearly a baby brother of the Bar 5.1, featuring the same curved-edge perforated grille chassis and circular top-panel controls. It measures 61cm wide, making it a good fit for screens as small as 28in up to around 55in, and it's not particularly deep or tall, either. You should have no trouble finding space for it.

The Bar Studio's left and right channels each get a 2in woofer and 1.5in tweeter, with a claimed 30W of amp power feeding the array. Frequency response is rated down to 60Hz.

Connections include optical digital audio, 3.5mm, USB, Bluetooth and

HDMI ARC (but no HDMI inputs for external sources). Not a bad selection considering the asking price.

A diminutive, slender remote is supplied that gives all functions equal-sized buttons. It does at least highlight the volume and bass level adjustment keys with a glossier finish, but is still the kind of zapper you need to peer at before using.

EQ on tap

A sound mode button on the handset cycles through five preset EQs (Standard, Movie, Music, Voice and Sports). Only a vertical line of LED status lights on the bar's left edge denotes which you are currently using – this same row also rises and falls with volume/bass changes.

There's also a surround mode, which kicks into life with a curious (and rather loud) bleepy sound effect. I'm normally wary of *faux* surround, especially from a two-channel device, but found this was able to noticeably expand the soundstage – skilfully casting a background police siren wide-left at one moment in *The Dark Tower* (Ultra HD Blu-ray) – without making a phalsey, echoey mess.

Alternatively, JBL's Movie preset is less concerned with width, instead favouring a

SPECIFICATIONS

DRIVERS: 2 x 2in woofers; 2 x 1.5in tweeters

AMPLIFICATION (CLAIMED): 30W

CONNECTIONS: 1 x HDMI ARC; optical digital audio input; 3.5mm minijack input; USB

DOLBY TRUEHD/DTS-HD MA: No/No

SEPARATE SUB: No **REMOTE CONTROL:** Yes

DIMENSIONS: 614(w) x 58(h) x 86(d)mm

WEIGHT: 1.4kg

FEATURES: 60Hz-20kHz claimed frequency response; Standard, Movie, Music, Voice and Sport presets; Bluetooth; wall-mount fixings supplied; Surround mode

more forceful, full-on presentation by bumping up the levels of atmospheric FX.

Even sticking to the Bar Studio's Standard EQ, it's straight-up 2.0 presentation is pretty impressive. An expected lack of scale (and no matter which preset you opt for, this budget offering is limited in this regard) is countered by a pleasing heft to its output and well-projected dialogue.

With *The Dark Tower*, the various inflections and accents of the cast are easy to discern, and the soundtrack's frequent use of lower frequencies (either for earthquake rumbles or moments of drama) have a genuine dynamic impact.

There's good separation too; the film's orchestral score, Foley and dialogue are cleanly delivered, rather than as a mush. Some treble details can exhibit a raspy edge at high volumes, though.

Multichannel may be off the menu, but the Bar Studio can still create a sense of immersion from a source. A dream/vision sequence in Chapter 3 of *The Dark Tower*, where Idris Elba and Dennis Haysbert turn and twist in a mist-shrouded forest, teases the playful sound design of its Atmos/TrueHD origins. And when Matthew McConaughey suddenly commands 'Stop breathing!', all close-mic'd and menacing, the effect remains spooky.

That there's no subwoofer isn't a major drag. Certainly it means an absence of genuine LFE, but on other hand it lets this single-enclosure system show a good balance and cohesion between bass and mids. And it's one less box to think about.

Overall, the Bar Studio is a neat proposition, and ripe for a no-frills second-room setup ■

AV INFO

PRODUCT: Stereo soundbar with HDMI ARC

POSITION: JBL's entry-level soundbar, and only one without a sub

PEERS: Acoustic Energy Sound3ar; LG SJ2

HCC VERDICT



JBL Bar Studio

→ £100 → www.jbl.com

WE SAY: Connectivity is solid on this budget 'bar, as is overall sonic performance. Virtual surround is worth playing with too.

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Denon HEOS Bar

Denon's multi-talented HEOS Bar has **Jamie Carter** streaming Björk, kicking back with *The Last Jedi* 4K BD and pondering a wireless 5.1 upgrade



A THREE-CHANNEL MONSTER that brings a warm musicality to TV and movies, the all-in-one HEOS Bar from Denon does so much more than merely boost the audio from a flatscreen TV. It's mostly about music, and more specifically, wireless streamed music from the likes of Spotify, Deezer and Soundcloud. As such, it directly challenges the likes of the Sonos Playbar, and for my money, it wins that contest hands-down.

However, more impressive are its two home cinema features; HDMI switching, and an ability to add wireless rear speakers to create an occasional 5.1 system. And what would you do with those two 'spare' rears when you're not watching films? Whole-home multiroom music, of course.

At just over a metre long, the HEOS Bar is a good match for 50in and larger screen sizes (although there's nothing to stop you using this with a smaller display, as long as your AV furniture can accommodate it).

There are two ways to use it; on a wall or placed in front/below a TV. Two brackets in the box act as either wall fixings or as props

to lift the product off a TV stand. The HEOS Bar does need to be turned through 180 degrees between its two orientations, which means the logo would be upside down for one of them. Luckily, Denon has thought of that, and the logo pops up and swivels around.

Each of the soundbar's three channels (left, centre, right) are given a pair of 2in x 5in oval woofers and a 1.5in tweeter, with six Class D amplifiers providing power.

While it behaves well on its own and makes for a clutter-free solution, it's possible to add a HEOS Sub (£600) to arrive at a 3.1 system. You can go to 5.1 with a pair of HEOS 1 HS2 wireless speakers (£150 each), and make the best use of onboard Dolby TrueHD and DTS-HD MA decoding.

As with all Denon's HEOS hardware, operation is mostly done via the free HEOS smartphone/tablet app. In use, this offers a similar approach to the app used by Sonos, with the same process of logging-in in-app to specific music streaming platforms, and cueing up songs to play next.

Balanced musicality

Where the HEOS Bar differs from some of its rivals (the Sonos Playbar in particular) is its more balanced musical sound quality. And despite the HEOS app lacking much in the way of audio tweaks, I never felt any real need for them; Björk's *Utopia*, streamed from the Deezer HiFi platform (16-bit/44.1kHz FLAC),

SPECIFICATIONS

DRIVERS: 3 x 2in x 5in oval woofers; 3 x 1.5in tweeters **ONBOARD POWER (CLAIMED):** N/A **CONNECTIONS:** 4 x HDMI inputs; 1 x HDMI ARC output; optical digital audio input; coaxial digital audio input; 3.5mm stereo audio; USB; Ethernet **DOLBY TRUEHD/DTS-HD MA:** Yes/Yes **SEPARATE SUB:** No **REMOTE CONTROL:** Yes **DIMENSIONS:** 1,100(w) x 148(h) x 72(d)mm **WEIGHT:** 4.8kg

FEATURES: Wall-mounting option; four built-in IR repeaters; 4K HDR passthrough via HDMI 2.0/HDCP 2.2; Virtual Surround; Movie Surround; Dialogue Enhancer; Music and Night modes; dual-band Wi-Fi; Bluetooth; streams from Spotify, Tidal, Deezer, Soundcloud, TuneIn radio; plays MP3, WMA, AAC, FLAC, ALAC, WAV and DSD files; Dolby Vision; HLG

Denon supplies wall-mount fixings for the HEOS Bar

is conveyed by this soundbar with a good mix of detail and warmth.

Even more detail is dragged from some hi-res FLAC and WAV music files fed from a USB thumb-drive (although, sadly, that USB slot, being mounted on the back, is particularly hard to reach when the HEOS Bar is in front of a TV).

It's almost as adept with movies, offering enough bass response during a run-through of *Star Wars: The Last Jedi* (Ultra HD Blu-ray) to bring scale to the onscreen action, plus a good sense of channel separation. Denon's virtual surround mode doesn't noticeably change much at all, however.

Another area where the HEOS Bar rises to the cream of the crop is with its HDMI 2.0a switching. Able to passthrough 4K HDR video, it's possible to attach four source devices in a home entertainment setup. In my tests I did experience a few switching delays, but lip-sync was kept in check.

Thoroughly modern

Soundbars that do anything other than disappoint are rare, but the entry here of a heavyweight audio brand is a chance to witness powerful, detailed and warm sonics in spades. Add in the wireless streaming, multiroom, 4K HDR-ready HDMI switching functionality and system expandability, and it's hard to think of the HEOS Bar as anything other than a thoroughly modern soundbar that takes full advantage of Denon's musical heritage ■

AV INFO

PRODUCT:

Multiroom ready, hi-res capable soundbar

POSITION:

Denon's premium soundbar option, above HEOS Home Cinema bundle

PEERS:

Yamaha YSP-2700; Samsung HW-N650; Sonos Playbar

HCC VERDICT



Denon HEOS Bar

→ £550 → www.denon.co.uk

WE SAY: Able to stream music, act as a system hub and initiate wireless multiroom, it's still the warm musicality that impresses most.



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Roku Streaming Stick+

Roku's debut 4K and HDR streamer satisfies **John Archer**'s lust for independence and easy operation



Use the supplied remote or Roku's control app

HANDILY FOR ROKU, in the very week I did this review, YouTube was removed from Amazon video streaming devices because of a spat between Google and Amazon. This serves as a perfect reminder of just why Roku is perhaps the smart choice when it comes to the streaming devices.

Roku somehow seems to exist above and beyond all the petty corporate squabbling so rife elsewhere in the video streaming world. So aside from inevitably not being allowed to carry the iTunes film and TV library, Roku streamers have access to pretty much everything else, including Google Play, Amazon Video, Netflix, Now TV, YouTube and the catch-up services for all of the UK's main terrestrial broadcast channels. In fact, there are hundreds of apps – far more than you'll ever need. There are even direct buttons on the small but well configured remote that get you to Netflix, Red Bull TV, Rakuten TV and YuppTV. (Shame the latter three aren't for Amazon, YouTube and Google Play,

but I guess you can't have everything).

As well as delivering this library of apps, Roku displays a brilliantly neutral approach to presenting them. Nothing is promoted over anything else, and nothing is given undue prominence in the interface – unless you want it to be.

The sort of platform neutrality offered by the Roku Streaming Stick+ is refreshing in these increasingly fractious times.

Being independent isn't the Streaming Stick+'s only claim to fame, though. It's also Roku's first UK streamer to support 4K resolutions and high dynamic range. Don't expect ubiquitous 4K HDR support, however. During my audition it only applied to Netflix and YouTube – with Amazon Video, as well as Spectiv and CuriosityStream's 'sight seeing' and nature films, available in 4K only.

Setting the box up is extremely easy, and mercifully it doesn't do any of the 'forced HDR' nonsense that plagued the Apple TV 4K when it launched. The Roku correctly switches between HDR and SDR outputs as determined by what you're watching.

Wi-Fi master

The Streaming Stick+'s elongated design sticks out a bit awkwardly when placed in either rear or side-mounted HDMI inputs on your display, but its design is remarkably small considering how much power it packs. It draws its juice from almost any TV USB port, saving most people the bother of attaching it to a mains plug. The USB connection cable is fitted with a powerful Wi-Fi receiver too, which gets a good bar or two more Wi-Fi strength from distant routers than any rival device I've used.

The interface looks slightly dated with its plain purple background and boxy structure. However, unlike the cluttered mess of Amazon interface, Roku's is clean and easy to follow. Even better, it's simple to customise, and doesn't go overboard with

SPECIFICATIONS

CONNECTIONS: USB power input; HDMI output **KEY APPS:** Netflix; Amazon; YouTube; Now TV; BBC iPlayer; ITV Hub; All 4; My 5; Rakuten TV; YuppTV; Red Bull TV **AUDIO FORMAT SUPPORT:** Dolby 5.1; Dolby Atmos (DD+ format) **VIDEO FORMAT SUPPORT:** To 2,160p at 60fps; HDR10 **DIMENSIONS:** 11.9(h) x 20.3(w) x 93(d)mm **WEIGHT:** 25.5g

FEATURES: Customisable home screen; physical remote; Roku app (Android/iOS); built-in Wi-Fi reception booster; plug adaptor included; free Roku account required

ramming 'recommended' content down your throat.

The Streaming Stick+ delivers a strong streaming performance. It ramps up to the best-quality streams your broadband can support exceptionally quickly, and its 4K HDR10 visuals look as sharp, rich and punchy as they do from any other streamer.

Images seem exceptionally stable – a result, perhaps, of that Wi-Fi signal-boosting antenna integrated into the power cable. Roku's decision to output every stream in its native source format also means you always get the correct picture format.

The Stick+'s only real performance limitation – aside from not yet delivering 4K and HDR from as many sources as it might – is its lack of support for the Dolby Vision or HDR10+ dynamic metadata formats. The Apple TV 4K, Amazon Fire TV 4K and Google Chromecast Ultra all support Dolby Vision.

To me, though, this hardly seems like a deal breaker on a streaming device, especially when the asking price here is £60 and it gets so much else right. Not as on-trend as Amazon's Alexa-equipped Fire TV, but no less impressive. And watching YouTube on it isn't a faff... ■



HCC VERDICT

★★★★★

Roku Streaming Stick+

→ £60 → www.roku.co.uk

WE SAY: No petty squabbles, no annoying content pushing – just heaps of content available through a straightforward interface.

AV INFO

PRODUCT: Streaming stick with 4K and HDR support

POSITION: Roku's top-tier streaming product for the UK

PEERS: Apple TV 4K; Chromecast Ultra; Amazon Fire TV 4K

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Nuraphone

Benny Har-Even enjoys these cans' personal touch

WHILE MANY OF us form a personal relationship with our kit after we've used it for some time, these headphones from Nuraphone look to do so right from very first use. Their unique feature is that they offer a sound that's personalised to the individual listener. For your ears only, as it were.

While the Nuraphones look like regular over-the-ear headphones (they connect via aptX Bluetooth – a 1.2m wired cable is available, but as a £15 accessory), the magic is inside earbuds in the earcups. Place the 'phones on your head, with the earbuds burrowed into your lug-holes, run the Nuraphone Bluetooth app, and microphones measure tones reflected by the inner ear. In conjunction with some clever calculations, these are used to create a sonic map of your ears. The output is then adjusted to match.

The cans are light but sturdy and the padded headband and silicon pads prove comfortable. However, the earbuds did make

their presence felt, affecting long-term listening enjoyment. Personal experience here may vary.

The profile takes minutes to create and you can have three profiles per device. I tested against my son's profile and most of the time we preferred our own.

And this futuristic approach to personal listening does work. As Baby walks the streets in the opening of *Baby Driver* (Blu-ray) with Bob & Earl's *Harlem Shuffle* on his headphones, Edgar Wright's sprightly direction echoes every musical phrase with a visual cue and the Nuraphones are the perfect partner. The sound is clean and fulsome, and there's so much energy to the rhythm and the horn blasts that I wanted to do a little shuffle myself (an 'Immersion mode', which provides a bass boost, can be tailored to your liking via Nuraphone's app). There is plenty of detail too, enabling you to lose yourself in the atmosphere of the scene, even with the Atmos



mix folded down to stereo. As the film moves into the next track, *Egyptian Reggae*, plucked strings sound rounded and forceful. Dialogue is clear and weighty.

Listen without your profile and the performance loses its panache. Stick to the tailored sound and you'll find these are among the best headphones at the price ■

HCC VERDICT

★★★★★

Nuraphone

→ £350 → www.nuraphone.com

WWW.DYNAUDIO.COM/£875

Dynaudio Music 7

Martin Dew gives a flagship HDMI-equipped multiroom speaker a run for its money

DYNAUDIO HAS A legacy of making speakers for recording studios and homes, but has now unleashed a wireless multiroom ecosystem, known as Music. Four models ascend the scale in price, performance and size. The most versatile and feature-rich, with an HDMI ARC connection joined by digital optical audio and 3.5mm input jacks, plus Wi-Fi and aptX Bluetooth hookups, is the Music 7.

Behind the angular grille are six drivers: two 1in tweeters, two 3in midrange units and two 5in woofers. Dynaudio claims the Class D power amplification for each is 50W.

The accompanying app is intuitive and handles setup, source selection, speaker EQ and NoiseAdapt and RoomAdapt DSP modes. Tidal streaming is integrated, with a free nine-month subscription thrown in.

Despite the Music 7's name, its physical likeness to an albeit slightly tall TV soundbar prompted me to shove it underneath a 55in set for some AV gymnastics. Bass was initially boomy, but selection of the RoomAdapt mode worked well to compensate this, with low notes confidently getting back into their stride. The speaker lent both weight and fidelity to

dialogue, while applying sturdy midrange clout to effects. Jerry Goldsmith's opening music to *Star Trek: The Motion Picture* was presented with an extraordinarily wide and authentic soundstage; I could even place the glockenspiel in the orchestra.

Switching to Tidal Hi-Fi and cranking up Daft Punk's *Get Lucky* demonstrated just how much drive and presence the Music 7 has, with bass energy swamping the room and Pharrell Williams' piercing vocals flung far. But this is not just a speaker for bouncy, modern pop; it was equally at home with the warm analogue origins of Jethro Tull's *Really Don't Mind*. It takes everything in its stride, majoring on clarity, dynamism and scale. Costly but classy ■



HCC VERDICT

★★★★★

Dynaudio Music 7

→ £875 → www.dynaudio.com

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Bowers & Wilkins PX

These wireless headphones improve on what came before, reports a happy **Benny Har-Even**

WHILE LAST YEAR'S Bowers & Wilkins P7 Wireless headphones were lauded for their sound quality, their lack of noise-cancelling tech meant they lagged behind rivals. This has been corrected with their replacements, the simply-named PX. Out of the box I immediately missed the luxurious plush feel of their predecessor but the extra functionality here more than makes up for it. The cups are grippier, though, which might prove bothersome after extended listening.

The noise-cancelling feature works well. It requires an app on your connected device and offers three levels of filtering – Office, City and Flight – and each can be set to



A more ostentatious gold finish is an option

let through varying degrees of ambient noise.

For a purer, more undiluted sound you can turn the feature off entirely. Do this and you'll be rewarded with a classy audio performance. The somewhat bass-heavy approach of the P7 Wireless has been tamed, delivering a neutral, balanced sound. In Taika Waititi's quirky *Hunt for the Wilderpeople*, the ambience of the New Zealand bush is wonderfully conveyed, along with the film's rhythmic soundtrack, while the more bombastic style

of *Star Wars: The Force Awakens* was suitably thrilling. It's musically on-point too: Massive Attack's *Teardrop* reveals the excellent timing of the 40mm drivers, which have filtered down from B&W's flagship P9s.

What makes these cans a winner, however, is their practicality – a motion sensor automatically pauses what you're listening to when you remove them (and automatically restarts your content), so you can zone out of Netflix to answer the door and then get back to it without missing anything. The claimed 22-hour battery life also stood up well during testing.

This is another class act from Bowers & Wilkins – and one that will give wireless naysayers a bit of a headache ■

HCC VERDICT



Bowers and Wilkins PX

→ £300 → www.bowers-wilkins.co.uk

WWW.AIRPULSEAUDIO.COM /£800

Airpulse Audio A200

These speakers' premium build and ribbon tweeters have **Steve May** grinning all over

WHILE THE BRAND may not be familiar, the designer behind Airpulse Audio might be. Phil Jones helped found British hi-fi outfit Acoustic Energy, and was responsible for a run of high-performing designs. These studio-style active monitor speakers are built from comparable sonic DNA.

Build quality and cosmetics are unmistakably premium; the cherry wood cabinetry has a lush, satin-lacquer finish that is definitely living room friendly.

Built into the enclosures are 5.5in midbass drivers with stiff aluminium cones, and horn-loaded ribbon tweeters.

These tweeters are key to the Airpulse Audio A200's outstanding detail. A CD rip of Blondie's *Sunday Girl* is conveyed as fresh and punky; the scritch of guitar and percussive detail sounding as exciting as a night on the town in 1970s New York.

Connectivity is good. The integrated amp on the 'master' speaker (which links to the

'slave' via a supplied cable) links to two analogue inputs (one balanced), plus two digital (optical and coaxial) audio ports. There's also Bluetooth aptX support for direct streaming. A claimed 2 x 10W drives the ribbon tweeters, with 2 x 55W feeding the woofers. The rear panel section has volume, bass and treble knobs, all offering a tactile incremental movement. A remote makes source switching simple.

While the A200s expend most of their energy above 50Hz, that doesn't mean they can't rock. *Sweet Leaf* (Black Sabbath), remastered in MQA for the *Ten Year War* boxset, is pure excitement with engaging stereo imaging. The speakers are high-res audio capable, handling signals up to 192kHz.



The ribbon tweeters deliver a detail-rich sound

Audition these if you want active speakers that outperform the usual wireless suspects when it comes to scale and resolution ■

HCC VERDICT



Airpulse Audio A200

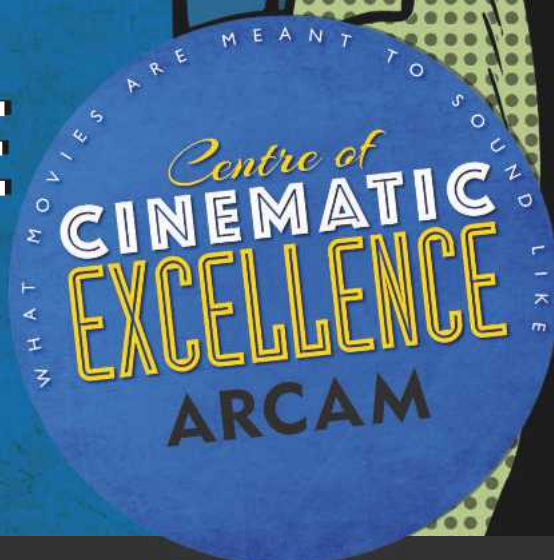
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Panasonic SC-GA10

This Google-powered speaker is a class apart when it comes to sound quality, says **Steve May**

MORE OFTEN THAN not, buying a smart speaker has involved some degree of performance compromise. While there's no shortage of good-sounding Bluetooth speakers around, even the best smart speakers can be rather less tuneful.

Panasonic aims to change that with the SC-GA10. This Google Assistant desktop device has been designed from the outset to sound a class above.

Amazon Alexa may rule the connected speaker sector, but Google's ecosystem is maturing rapidly. Compatibility now straddles mobile devices, TVs and media players, with gains in functionality. The platform is increasingly an attractive addition to any media cinema setup.

The speaker stands 284mm tall, and weighs a respectable 1.7kg. In addition to a connection for the power brick, there's a 3.5mm input jack for a hard-wired music source, plus Bluetooth.



The SC-GA10 uses twin tweeters and a single woofer

In the context of a standalone smart speaker, the performance of the SC-GA10 is startling. It sounds gloriously fulsome, with a smooth midrange and weighty and impactful bass. And despite the tower block design, the soundstage is far from narrow. There's enough width and volume to comfortably fill an average-sized room, and off-axis listening is fine.

Two offset 20mm dome tweeters are supported by a deceptively powerful 3in woofer, allied to a snaking bass reflex port. The power output is rated at 2 x 20W, but this rather underplays just how gutsy it sounds. Led Zeppelin's *Immigrant Song* comes across with rollicking musicality. Its performance is comparable with multiroom speaker offerings like the Sonos Play:1.

If there's a caveat, it's with the noise-cancelling microphone array. Playing at only moderate levels, the GA10 just doesn't seem to hear its 'Hey Google' wake up call. The best way to manage playback volume is either by using the on-body controls, or Panasonic's app ■

HCC VERDICT



Panasonic SC-GA10

→ £150 → www.panasonic.co.uk

WWW.APPLE.COM/£200 (64GB)

Apple TV 4K

Apple has embraced 4K HDR and delivered a box that's fit for home cinemas, says **John Archer**

WITH THE LATEST Apple TV, the mega-brand has a device that combines a push for picture quality with a compelling value proposition. It should be enough to make any Apple-phobe sit up and take notice.

The beauty here is on the inside. The OS is driven by the same A10X chip Apple uses in its

iPad Pro, which quadruples the graphical grunt of the chip inside the earlier, non-4K Apple TV. Its HDMI output is now capable of sending 4K resolution video and HDR – and Apple hasn't just embraced HDR; it's embraced Dolby Vision HDR, and offers a startling number of movies in that format on iTunes, for the same price as its HD content.

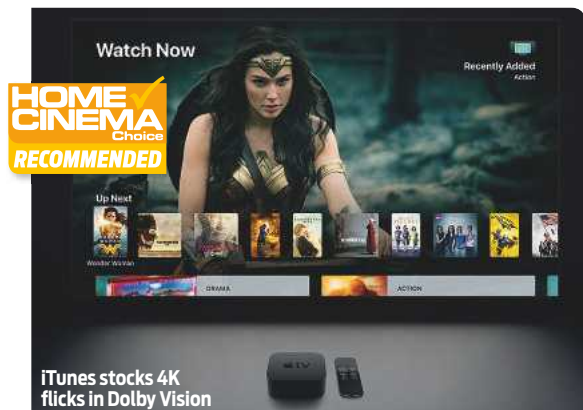
There are riders to add to all this 4K excitement, of course. First, you'll need at least 15Mbps of broadband speed to enjoy Apple's 4K streams. Also, while the iTunes streams are of a good quality, they don't look as good as most 4K Blu-rays.

Some launch niggles have been fixed (including content output in whatever format you'd got selected in the Apple TV 4K's menus – you could, for instance, find yourself watching *EastEnders* from the BBC iPlayer in 'Dolby Vision...'), and Amazon Prime

Video added after a previous tiff between the two corps.

Netflix is present in its 4K HDR guise, along with UK catchup TV services and plenty more video options besides. There's also a huge selection of apps available to download. Some of the games are impressive in terms of both their scope and graphics, but the Apple TV 4K is no replacement for any modern console; Apple's remote control is a fiddly way of interacting with the majority of titles.

For a relatively casual user a Roku or Amazon streamer is a cheaper alternative. But if you want to take advantage of the excellent iTunes movie service, or are already invested in Apple's software/hardware landscape, the Apple TV 4K comes into its own ■



HCC VERDICT



Apple TV 4K

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Mark Craven discovers that prospective TV owners are converted to the 4K cause, but wish there was more content – and already know 8K technology is on the horizon

I'M ALWAYS FASCINATED by the wider public's perception of technology. That's not to say I'm not interested in the views of *HCC* readers, but it's how developments in consumer electronics are seen by the mass market that will, essentially, decide if said developments get off the ground (exceptions given for niche tech, of course). So a focus group survey by YouGov on 4K TV was always going to get my attention.

Earlier this winter, YouGov assembled two groups – one featuring 4K TV owners and the second made up of people who were hoping to buy a 4K set in the next year. The pollster says that both groups spanned gender, region, income and working status, and that the overall message from its work is that 4K TV 'will become the norm' – but there's a desire for more content.

So far, so expected, but quotes from two of the participants raise eyebrows, and both relate to 8K.

'I think that even with the dawn of 8K on the horizon, 4K will rapidly grow now the prices are dropping sharply and there is more choice,' said one prospective owner. '8K will be too expensive for a long while.'

Over to a 4K owner: 'I think they [4K TVs] will become the norm. That is until 8K sets are readily available.'

Here was me thinking that only die-hard home cinema enthusiasts had an opinion on 8K, or even knew what it was. But it seems the concept of 33-million-mega-pixel telly has already filtered through, despite there being next to no content available and just a handful of pricey first-generation screens. I can only imagine that awareness will continue to rise next year.

This is good news for 8K marketers, of course, and hardware sellers with formulated road maps

(think Samsung). But it's hard not to get the impression that 8K is becoming a cloud hanging over good old-fashioned 4K, which is worrying considering the latter format hasn't quite got its act together yet.

What I mean by that is nicely encapsulated by a further nugget from the YouGov report: 'Not being able to view standard terrestrial channels such as BBC and ITV is one specific complaint.'

Sleeping TV giants

Herein lies the rub. 4K TVs may be selling like hot cakes, but for many they come with an *amuse-bouche* of disappointment. It doesn't matter how much Netflix and Amazon and Sky put into their UHD content (much of it in HDR) – the twin giants of terrestrial telly haven't yet got seriously involved.

You may view linear TV as quaint and unfashionable, but it's still immensely popular, and that neither the Beeb nor ITV has managed to shift its flagship channel to 4K transmission is apparently a bugbear of flatscreen buyers. And when you consider that BBC One HD is approaching its ninth birthday, it's a view that's easy to understand. Everyone else is moving on, why not the channels at the top of the EPG?

Of course, there are technical (and financial) reasons for *The One Show* 4K no-show, but are these being effectively conveyed? While the BBC's iPlayer-based 4K HDR trials have gained nods of approval from the tech-savvy, has there been a lack of communication about why going down this broadband-delivered route is necessary?

Maybe 4K TVs need to be sold with a warning label: 'There's no such thing – yet – as BBC One 4K. And don't worry about 8K...' ■

*Are you planning a 4K (or even 8K) upgrade soon?
Let us know: email letters@homecinemachoice.com*

Mark Craven is wondering if BBC local news transmissions will move to HD before his PS4 console gets an 8K makeover





In The Mix

Jon Thompson is in a bit of bother and it's all the fault of HDMI – will the long-awaited debut of HDMI 2.1 resolve a surprising technical hiccup?

HATE IS A very strong word that I try to avoid. As Master Yoda says, 'hate leads to the Dark Side.' So I am not going to say I hate HDMI, but I will say I greatly dislike it, and compared to its sibling DisplayPort it truly is total junk.

From day one HDMI was a never going to achieve greatness for the simple reason its developers took DVI-D, a computer graphics interface, badly worked out how to add sound, and made the connector smaller and less user-friendly. They designed a plug with no locking mechanism, instead making it a friction grip. DisplayPort has a very simple locking clip. **We haven't even started on the technical spec yet and we can see it's physically inferior already.**

But what's my real beef? That the specification is never fully used.

All HDMI-based devices have a major flaw, which is that at 10-bit you can't watch video at full bandwidth. Despite the HDMI spec saying it supports from 8- to 16-bit, none of the HDMI chipsets support 4:4:4 colour at 10-bit; it will be downsampled to 8-bit. You might think you are looking at your lovely HDR10 at 10-bit and what you find is that if you have set your player to 4:4:4 output it will only be 8-bit.

I went to a number of manufacturers to ask how this could be the truth. It seems for simplicity, HDMI chipset makers implemented 8-bit, and then only ever implemented the 12-bit Deep Colour format, which is 4:2:2, still not full bandwidth. Apparently, if you want to watch 10-bit HDR10 you need to set your player's HDMI output to 4:2:2. This is not only disappointing, it's also very confusing.

Looking at a DisplayPort, it seems to have no issue supporting up to 16-bit per colour/channel. I've spent some time on computer gaming forums and this is a

massive topic. In home cinema land, I can't really find anyone talking about this.

Gamers have a choice and DisplayPort is the preferred method of connection. When they decide to connect via HDMI and check their settings they wonder why the 10- or 12-bit option is greyed out.

On UHD Blu-ray players like the Oppo 203/205, you can set any combination of outputs – 4:4:4 12-bit, even 4:2:0 12-bit. But connect a video analyser and you'll notice that if you set 4:4:4 it locks the pixel depth to 8-bit regardless of its setting. 4:2:2 likewise locks output depth to 12-bit. With DisplayPort, choose 4:4:4 10-bit and 10-bit shows on the analyser. As it should.

The chips are down

I only came across this when I moaned to the people who make the wonderful Murideo video analyser/test pattern generator. Why doesn't it show 10-bit when that's what I set my player to? Their answer was the chipset doesn't support it. And even if it did most displays will only see it as 8-bit, as the receiver chipsets only support 8-bit or 12-bit profiles.

Arcam's director of engineering Nick Clarke confirmed this, saying commercially available chips only support those two profiles for bit depth. He told me his company had supported DisplayPort on early versions of some of its high-end products, but then HDMI became the *de facto* AV interface.

The good news is that HDMI 2.1 chipsets (which should finally arrive next year) might actually support all the profiles that have been in the spec since HDMI 2.0. So, at last, you might be able to see HDR at 10-bit without a workaround of setting your player to 4:2:2. But I'm still going to be a fan of DisplayPort ■

*Have you got an HDMI horror story?
Let us know: email letters@homecinemachoice.com*

When he's not in his screening room, **Jon Thompson** tweets about Hollywood gossip, movie-making and digital mastering at @johnnyfocal



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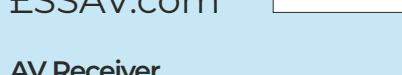


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Feedback

Got an axe to grind? Need to comment on current tech? Want to share your knowledge with our readers? **Team HCC** is here to help

My system lives on

Regarding your curiosity about older AV gear still working [*Feedback*, HCC # 293] I have a Denon AVR-1909 receiver that I bought about a week before Christmas in 2008 along with a set of KEF 3000SE 5.1 speakers and a DMP-BD35 Panasonic Blu-ray player. I also bought a Philips 42PFL9703D TV and a Humax PVR9300T digibox recorder at the same time.

The Humax has been consigned to the loft (still in working order, but not HD – I now have an HD PVR from Talk Talk for my HD recording). The TV was replaced two years ago with another Philips, a 65PUS7601, but is still working – my son has it in his flat.

The only thing to go wrong with anything was a repair to the Denon amp, but it is okay now. And the TV bracket has nothing wrong with it either! Not bad for ten years old I think. Value for money indeed.

R. Earl

Mark Craven replies: It's good to hear you're still getting a lot out of some 10-year-old AV gear. Come to think of it, although I have moved on through various TVs over the years,

I know a Sony V Series Bravia from around 2006 that I passed on to a friend continues to perform. On the other hand, I had an Xbox One that managed to last around 13 months before deciding it only wanted to play CDs and nothing else. You win some, you lose some...

Roll up roll-down TV!

Re: the letter from Gary in HCC #293 about the eventual demise of projectors, I would like to suggest he is correct. If the motorised roll-up LG (I think) OLED TV screen shown as a prototype eventually makes it to the market can I make a suggestion?

Why not fit it the other way up with the box bolted to the ceiling and just motor it down when viewing is needed? My 65in OLED has only one place it can be in the house and it completely blocks the view of the Lake District hills through the patio door it sits in front of.



Denon's 2008-era AVR-1909 has just three HDMI inputs

All our visitors think I am mad to place it there, but they are usually not TV/movie fans and do not understand!

Barry

Mark Craven replies: There's no shortage of wacky things being done with TV technology. As well as the roll-up OLED shown off at CES 2018 by LG, I remember a 'bendable' LCD from Samsung that could switch between flat and curved form at the touch of a button (it looked destined for greatness, until we all decided that curved TVs were a bit of a daft idea).

More 3D please!

HCC has not published a single 3D Blu-ray review for several months! I appreciate that 3D is no longer flavour of the month, but there are still stonking 3D releases which deserve to be brought to the attention of the buying public. For instance, take the 3D version of *Avengers: Infinity War*. The visuals, particularly during the climatic battle with Thanos, simply blow away the UHD version.

I'm guessing 3D purchasers are mainly enthusiasts, which precisely describes the bulk of your readership. We want to know which releases are worth buying. So come on, let's have some more 3D disc reviews. Steve Fyles

Mark Craven replies: We haven't given up on 3D, but studios no longer send 3D pre-release discs, which means any review we do has to wait until after the title is on general sale. But we take your point – we'll ramp up our efforts!



Avengers: Infinity War: better in 3D?

I'm not convinced that everyone is yet ready to move on from the traditional TV-on-a-unit installation (even wall-mounting a set is still viewed as futuristic), but the development of thinner, lighter, flexible displays and wireless connections may one day lead us to rethink our relationship with the gogglebox. And you might be able to enjoy that rural view again...

Help me upgrade

Hi guys. I really like your magazine and am looking for advice on upgrading my system to 4K. My system at the moment consists of the following: Sony VPL-VW40ES projector, Yamaha RX-V657 AV receiver, LG Blu-ray player and Bose speakers. I would like to move up without breaking the bank!

Dave

Mark Craven replies: I don't know your exact circumstances/room size etc, but one thing you need to work out is whether you want to simply upgrade your projector to 4K or perhaps add a second screen? The latter option will give you a little more buying choice.

Firstly, I'm assuming you want to move up to 4K Blu-ray, which means your 1080p LG player will have to go. The good news is there are affordable UHD options available – our favourites around and below the £200 price point are Sony's UBP-X700 and Panasonic's DP-UB420. Both, naturally, support HDR10 as found on 4K Blu-rays, but the former also supports Dolby Vision, while the latter decodes HDR10+. This is only an issue depending on the other upgrade you'll need to make...

If you're all about largescreen viewing and merely want a replacement for your Sony PJ, then Epson's EH-TW7400, around £2,200, would be a good first audition. This pixel-shifts images to create a 4K experience, rather than using native 4K silicon, but is highly impressive and accepts 4K HDR content. Add a UHD deck and you're in business.

If that sounds too much like breaking the bank, step down to a 4K HDR DLP model from the likes of Optoma, Acer or BenQ – but be aware that most of these lower-cost beamers don't carry the 1.6x zoom of your Sony model, and thus offer less flexibility when it comes to placement. You might also find you're susceptible to DLP's rainbow effect, and miss the black level punch of the VW40 PJ.

As mentioned earlier, you could add a flatscreen TV to your setup instead, still keeping the Sony projector you presumably enjoying using. Projectors don't offer the same HDR and colour punch as LCD/OLED displays due to their low native brightness – even a low/mid-range 4K telly will work better with some aspects of the UHD BD experience, albeit on a smaller scale. If going down this route you should also upgrade your elderly Yamaha receiver as you'll want to be able to easily switch between two HDMI outputs. Some TVs

★ Star Letter...

My Blu-ray wishlist

Great opinion piece [Film Fanatic] in HCC #292. I have been building a big Blu-ray library to keep me entertained in my retirement, and here is my list of essential films yet to be put out on Blu-ray.

Three Godfathers; Death In Venice; Fort Apache, The Bronx; Half A Sixpence; Ivan The Terrible (and Part II); Ju Dou; Kluge; Lady Caroline Lamb; Let It Be; Lives of Bengal Lancers; Local Hero; Lock, Stock and Two Smoking Barrels; Nun's Story; O Lucky Man; The Odd Couple; Old Ironsides [1926]; Pat Garrett and Billy the Kid; Pathfinder; Peggy Sue Got Married; Pink Panther: A Shot in the Dark; The Pink Panther Strikes Again; Popeye; Prime of Miss Jean Brodie; Prisoner of Zenda [1937/1952]; Private Life of Henry VIII [1933]; Queen Christina; Quiller Memorandum; Tom Horn; Will Penny; Winchester '73; Wonderful World of the Brothers Grimm; Wrong Arm of the Law; Wuthering Heights [1939]; Zabriskie Point.

I have got a few BDs from Amazon Spain (e.g. *Ryan's Daughter*) which are good but were they mastered from the primary source?

Lawrence Dalton

Anton van Beek replies: That's a wide-ranging list Lawrence, and proof that there are still plenty of holes to be filled when it comes to Blu-ray releases.



A couple of points, however. Firstly, *Lock Stock and Two Smoking Barrels* has definitely had a UK Blu-ray release (back in 2010), but this

now seems to be out of print. Secondly, some of the titles you've listed have had Blu-ray releases in other territories – *Winchester '73* in France, Germany and Australia, and *The Odd Couple* and a boxset of the six Peter Sellers *Pink Panther* movies in the US. Admittedly, the latter is locked to Region A, but it's yet more evidence that owning a multiregion Blu-ray deck is a necessity for the dedicated film fan who doesn't want to miss out on owning their favourite films in the best versions possible.

As for why titles like *Pat Garrett and Billy the Kid* (pictured) haven't had hi-def debuts, it usually boils down to distribution rights. In the case of this Sam Peckinpah Western, it was originally an MGM release, but following the trail of who owns that company's catalogue has become very complicated in recent years. The film was released on DVD by Warner in 2006, but I'm not sure it still has the rights.

One bit of good news is that critic Mark Kermode recently revealed he had recorded a commentary with Bill Forsyth for a forthcoming Blu-ray release of *Local Hero*. I've no idea yet which label is putting it out, but expect it to debut in 2019.

Star letter-writer Lawrence grabs the revenge thriller *Yardie* on Blu-ray. The directorial debut of Idris Elba, *Yardie* is available now to own on Digital Download, DVD and Blu-ray, courtesy of Studiocanal. Extras include four deleted scenes, two behind-the-scenes featurettes, cast and crew interviews, plus Idris Elba in conversation with Blacker Dread.



(although mostly pricier ones) may support Dolby Vision or HDR10+, so this could impact your player choice.

Also, as your current AVR doesn't support Dolby TrueHD, DTS HD MA or have any HDMI connections at all, a replacement here is probably best advised anyway.

5.1.4 or 7.1.2?

Hi, I have a Yamaha RX-A3080 and 5.1.4 setup at the moment, which is going to be 5.2.4 soon.

Is it better to run 7.1.2? The four Atmos speakers are overhead and rears are in the wall facing forward, which was the best I could do with the room.

Brett

Mark Craven replies: Is one better than the other? That depends on the film's soundmix, the dimensions of your room, your personal taste, the quality of your speakers, etc.

If you're set up for 5.1.4 then that's what I'd stick with. By all means try and find space for two extra flat-level surrounds, but not at the expense of two of your Atmos channels. Unless you're not happy with how it sounds? ■

Contact us...

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WIN! Great Blu-rays up for grabs...

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Westworld: Season Two – The Door

The sensational second season of HBO's critically-acclaimed science-fiction series *Westworld* is now available on 4K Ultra HD Blu-ray™, Blu-ray™, DVD and Special Edition Blu-ray™ Steelbook, courtesy of Warner Bros. Home Entertainment. To mark the release, we have two copies of *Westworld: Season Two – The Door* on 4K Ultra HD Blu-ray™ to give away!

Question:

Which author wrote and directed the original *Westworld* movie?

Answer:

- A) Stephen King
- B) John Grisham
- C) Michael Crichton



Final Score

Die Hard meets *Match of the Day* when terrorists take over a football stadium in this explosive action-thriller starring Dave Bautista and

Pierce Brosnan. *Final Score* is out now on Digital HD, DVD and Blu-ray – and thanks to Signature Entertainment & Sky Cinema we have five Blu-rays to be won!

Question:

The Boleyn Ground was home to which football team until 2016?

Answer:

- A) Tottenham Hotspur
- B) West Ham United
- C) Crystal Palace



Opera

Dario Argento's 1987 horror masterpiece *Opera* makes its long-awaited Blu-ray and VOD debut on January 21, courtesy of CultFilms.

Newly restored in 2K with reference to Argento's own, preferred, original cinema print, this stylish slasher looks better than ever – and to celebrate we have five *Opera* Blu-rays to give away!

Question:

Which of the following is not one of Argento's so-called 'Animal Trilogy' of thrillers?

Answer:

- A) *The Bird with the Crystal Plumage*
- B) *Death Shroud of a One-Eyed Cat*
- C) *Four Flies on Grey Velvet*



King of Thieves

Sir Michael Caine and Ray Winstone lead an all-star cast in this retelling of the Hatton Garden diamond heist. *King of Thieves* is available to own on Digital

Download from January 14, followed by DVD and Blu-ray on January 21, courtesy of Studiocanal. To mark the occasion we have five Blu-rays up for grabs!

Question:

In which 1960s film did Michael Caine play a thief called Charlie Croker?

Answer:

- A) *Gambit*
- B) *Deadfall*
- C) *The Italian Job*

To enter any of the above competitions go to www.homecinemachoice.com/competitions

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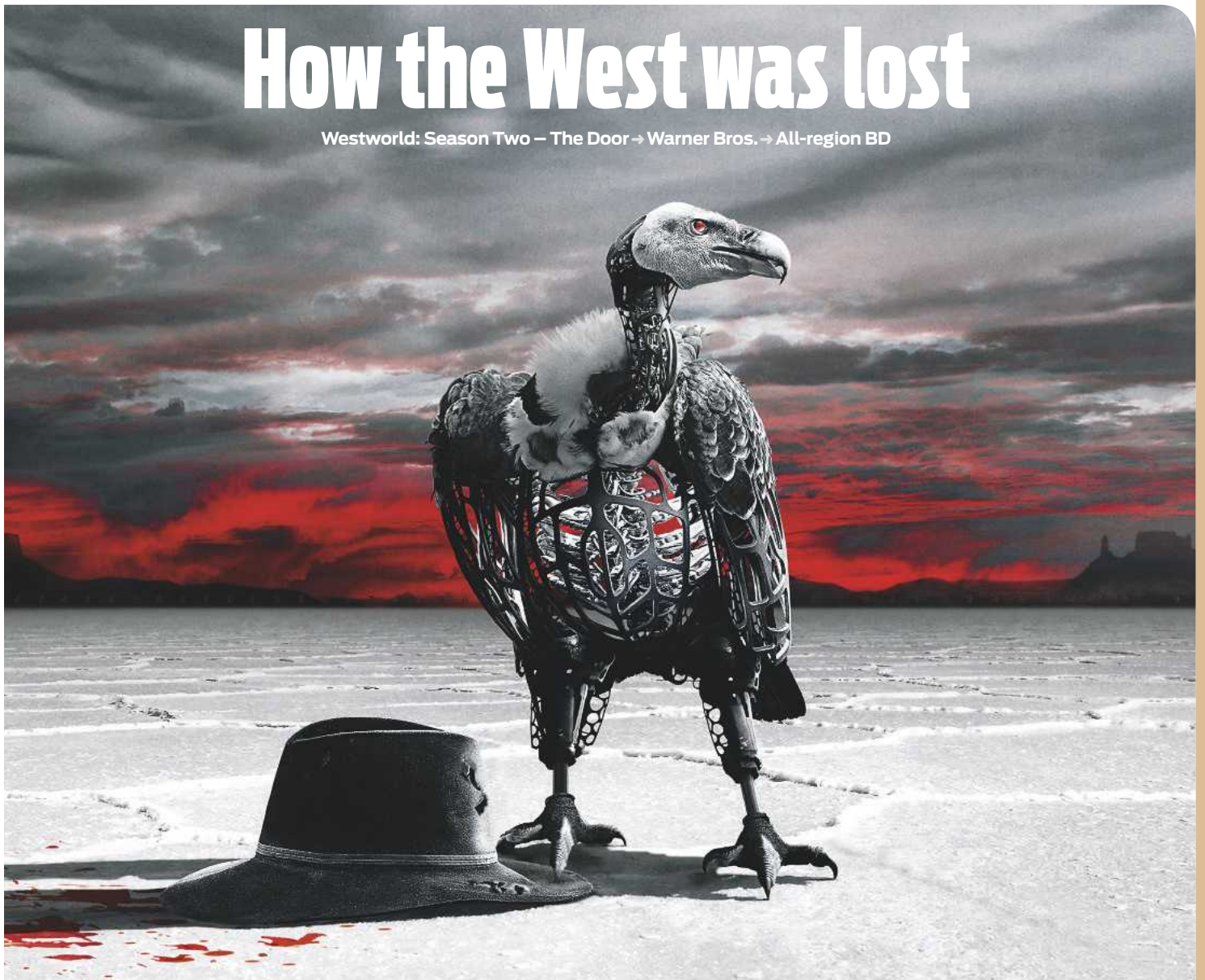
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PLAYBACK

→ **SOFTWARE HIGHLIGHTS** **THE MEG** Just when you thought it was safe to go back in the water **THE EQUALIZER 2** Action sequel packs a punch on Ultra HD Blu-ray **THE NUN** What's black and white and red all over? **THE LION KING** Animated classic runs wild in 4K HDR **THEY SHALL NOT GROW OLD** Archival war footage gets a new lease of life **& MORE!**

How the West was lost

Westworld: Season Two – The Door → Warner Bros. → All-region BD



The tables have turned and the robot rebellion is in full swing in the second season of HBO's acclaimed sci-fi series. Check out our review on p108 to see if you should form a posse and round up a copy of the Blu-ray boxset.

HCC RATINGS KEY...

Outstanding	★★★★★
Above average	★★★★☆
Acceptable	★★★☆☆
Disappointing	★★☆☆☆
Dire	★☆☆☆☆

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'We're gonna need a much, much, much bigger boat!'



Bigger doesn't mean better

Has action star Jason Statham bitten off more than he can chew with this giant shark thriller?



→ THE MEG

When a research submersible exploring a previously undiscovered undersea realm at the bottom of the Mariana Trench gets into trouble, deep sea rescue expert Jonas Taylor (Jason Statham) returns from self-imposed exile to save the day. But when they're followed back to the surface by a 75-foot prehistoric shark, Jonas and the team of scientists must come up with a way to stop this living fossil before it topples mankind from the head of the food chain.

It probably won't come as a surprise to anybody that *The Meg* doesn't come anywhere close to matching the quality of *Jaws*. But nor does it try to. As director John Turteltaub states in one of the extras on this Blu-ray: 'We all learned a great lesson from watching *Jaws*. That the longer you wait and the less you see of [the shark], the scarier it'll be. We didn't do that...'

Instead, *The Meg* has more in common with those cheapo shark attack movies that regularly fill the Syfy channel's schedules. It's pure B-movie cheese, albeit done on a blockbuster budget and with state-of-the-art visual effects. And taken as such, it's a perfectly enjoyable way to spend a couple of hours – but be aware the film shies away from the sort of carnage the story really demands, rendering its giant shark a little toothless.

Picture: With memories of a strikingly sharp IMAX laser projection of *The Meg*

still fresh in our minds, we were understandably expecting great things from this Blu-ray's AVC 2.40:1-framed 1080p encode. And often, that's exactly what we got, with close-ups in particular revealing a wealth of meticulous detailing. Meanwhile, primary colours have plenty of 'pop' when set against the film's predominantly cool blue-grey palette.

However, even away from some deliberately blurred underwater footage, the imagery doesn't always look so impressive. High brightness peaks give the film's visuals a very contrasty appearance, and while this is fine with bright, sun-lit exteriors, it leaves interiors looking flat due to washed-out areas of shadow. Colour banding also rears its head from time to time, the cage dive in Chapter 7 being particularly troublesome in this regard.

Audio: The disc's Atmos mix delivers a hugely immersive and involving aural experience. Atmospherics regularly extend up into the height channels, use of the surrounds/rears is faultless, and LFE is deep and persistent. Dialogue remains crystal clear at all times.

Extras: All you get are a pair of short behind-the-scenes videos and a completely pointless promo for New Zealand, where some of the film was shot. **AvB**

HCC VERDICT

The Meg

→ Warner Bros. → All-region BD
→ £25

WE SAY: A killer Dolby Atmos mix adds some much-needed bite to this big-budget B-movie.

Movie: ★★★★★

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★☆☆☆

OVERALL: ★★★★★



The Spy Who Dumped Me

Lionsgate → Region B BD
£25



Enjoyable interplay between its two female leads (Mila Kunis and Kate McKinnon) plus a series of surprisingly effective action scenes elevate *The Spy Who Dumped Me* above the typical, run-of-the-mill raunchy comedy. This Blu-ray release delivers a cleanly rendered AVC 2.40:1 Full HD encode accompanied by a Dolby Atmos mix that easily justifies its existence once the bullets start flying. Enjoyable extras include an 11 minute *Making of...*; a nine-minute video about stunt coordinator Gary Powell; outtakes; and 11 deleted scenes. **MC**



Bodyguard

ITV Studios → Region B BD
£25



Writer Jed (*Line of Duty*) Mercurio's superior six-part political thriller looks great on Blu-ray, with the crisply detailed 2.00:1-framed 1080i50 encodes making the most of the show's distinctive visual style (a mix of narrow depth of field and big facial close-ups). Sadly, the LPCM 2.0 soundtracks are rather less impressive, particularly when it comes to bringing a scale and sense of dynamism to bigger set-pieces (the sniper attack in Episode 2, Chapter 5 sounds particularly dull in this regard). Two informative behind-the-scenes vignettes are the pick of the set's disappointingly brief bonuses. **AvB**



Teen Titans GO! To the Movies

Warner Bros. → All-region BD
£15 (HMV exclusive)



The TV 'toon featuring DC's silliest superheroes makes the leap to the bigscreen with Robin and chums heading off to Hollywood to get a movie of their own (well, every other superhero has one). The result is not only more irreverent than the *Deadpool* films, but also funnier and more knowing. It even has an *Evil Dead* Easter Egg – how many kids' films can you say that about? This Blu-ray release shows the 'toon off brilliantly, marrying a sharp and colourful 1.78:1 1080p encode to a boisterous DTS-HD MA 5.1 soundtrack. Extras include an animated short and a deleted song. **AvB**



Nun more scary? Not quite...

The hills are alive with the sound of screaming in this latest *Conjuring* prequel

→ THE NUN

Spinning out of 2016's *The Conjuring 2*, Corin Hardy's *The Nun* follows in the footsteps of 2014's *Annabelle*, leaving psychic investigators Ed and Lorraine Warren behind to give another of the franchise's spooks its own origin story.

Winding back the clock to 1952, *The Nun* follows Vatican-sanctioned exorcist Father Burke (Demian Bichir) and novice Sister Irene (Taissa Farmiga) as they visit a remote convent in Romania to investigate the suicide of a nun. It soon transpires that things are far worse than they ever imagined: an ancient demon called Valak, imprisoned there since the middle ages, has escaped its bonds and now stalks the convent in the guise of a pasty-faced nun (Bonnie Aarons).

Less a story than a string of spooky set-pieces (often borrowed from other horror films), *The Nun* fails to match the horrific heights of either the first *Conjuring* movie or 2017's *Annabelle: Creation*. At the same time, director Corin Hardy makes good on the promise shown by his creepy 2015 debut *The Hallow*, staging it all with plenty of panache and ensuring that his film proves far more entertaining than the first, lacklustre, *Annabelle* flick.

Picture: Dark and gloomy it may be, but *The Nun*'s 2.40:1-framed 1080p encode is more than capable of scaring up some impressive visuals. Shadows are deep and inky, but still hold detail; locations and costumes are finely textured; contrast levels are excellent; and primary colours, when they appear (as in the red lighting that bathes sections of the room where Father Burke does his research in Chapter 6), are richly saturated.



Minor banding raises its head in some of the light sources in darker scenes and there's a smattering of noise in a handful of shots, but these are fairly minor quibbles with an otherwise sound HD transfer.

Audio: *The Nun*'s Dolby Atmos soundtrack is a satisfying mix of localised surround effects and a wide dynamic range that is capable of going from a whisper to a scream at the drop of a hat. Use of the added height layer isn't especially pervasive, but it still comes in handy for amping up some of the big scares.

Extras: There's not much in-depth here. A *New Horror Icon* (five minutes) focuses on the creation of the film's demonic nun, while *Gruesome Planet* (six minutes) finds the cast and crew extolling the virtues of shooting on location in Romania. *The Conjuring Chronology* (four minutes) is basically an extended promo for the franchise. Rounding things off is a collection of seven deleted scenes. **AvB**



HCC VERDICT

The Nun

→ Warner Bros. → All-region BD
→ £25

WE SAY: Spirited horror spin-off doesn't do anything new, but still conjures up some solid scares.

Movie: ★★★★★

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★★★★

OVERALL: ★★★★★

'Stop smiling and get me a nappy!'



The king of the 4K jungle?

Hakuna Matata! Disney brings one of its best-loved animated classics to Ultra HD Blu-ray

→ THE LION KING

The Lion King lands on 4K Blu-ray one year shy of its 25th birthday, and remains one of Disney's finest achievements. It's a stellar combination of gorgeous old-school animation, memorable music from Elton John and Hans Zimmer, unforgettable characters and a deceptively sophisticated story that's as irresistible to adults as children.

The Lion King is also the first of the 'classic' Disney animations to arrive on 4K BD. And unfortunately for your wallet, it does enough to suggest that you'll probably end up buying the whole Disney canon one more time...

Picture: Image quality is lovely – albeit not game-changingly so. The visuals are gorgeously clean, and while the sort of 'broad strokes' classic animation techniques Disney employs on *The Lion King* don't lend themselves to the extreme detailing that 4K thrives on, everything at least looks ultra-crisp. And the extra definition creates a better sense of depth, especially during largescale set-pieces.

The addition of HDR10 (there's no Dolby Vision) and wide colour isn't particularly aggressive, and the way the film's been remastered – focussing on small highlights rather than dialling up average brightness – means you will need a pretty punchy display to stop the 4K image potentially looking a little dark. Colours appear slightly richer, especially where extra brightness is on hand to push tones further. There's a more dynamic feeling to the bold, emotional palettes of the film's stylised musical sections, too.



A 'live-action' version of *The Lion King* will hit cinemas next Summer

HCC VERDICT

The Lion King

→ Walt Disney → Ultra HD Blu-ray & All-region BD → £30

WE SAY: Comfortably the best this Disney classic has ever looked or sounded.

Movie: ★★★★★

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★★★★

OVERALL: ★★★★★

Overall, Disney seems more focused on using 4K Blu-ray to eke out every last drop of quality from the original source than on pushing the format to the max.

Audio: Disney has created a mostly excellent new Dolby Atmos soundmix for this 4K outing.

It injects a few height effects from time to time – such as during the rain storm near the end, or the wildebeest stampede – and there's greater scale to the songs and general score. Surround channels are busy too.

You don't get the bass depth or three-dimensional soundstaging that you tend to find with films mastered from the start for Atmos. Also, the surround channel effects can sound a touch brittle, and – strangely – the lead vocal on the opening *Circle of Life* rendition seems slightly muddled in the mix. For the most part, though, the extra emphasis given to effects and the far more epic feel of the film's music make this a track to savour.

Extras: Bonus features are all found on the Full HD Blu-ray that is packed alongside the 4K disc.

Highlights include a director's commentary, deleted and extended scenes, and a series of fascinating featurettes on the creation of five of the film's most famous sequences.

All have appeared before on previous Blu-rays, of course – most closely the Signature Collection re-issue. You do not, sadly, get a number of extras that were included on the movie's previous Diamond Edition release, and the 2011 3D conversion is predictably absent. **JA**

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Bigscreen home entertainment isn't just about movies anymore. **Rik Henderson** checks out a videogame vying for time on your home cinema system...



Fallout 76

Bethesda → PS4, Xbox One, Windows PC
→ £50

When is a *Fallout* game not a *Fallout* game? When it's got 76 slapped on the end, it seems. While this latest outing looks like one of Bethesda's beloved post-apocalyptic RPGs, it doesn't really play like one. And there are plenty of clues as to why the development cycle was shorter this time around.

Fallout 76 is a multiplayer online game that has similar combat systems to *Fallouts 3* and *4* and many of the gameplay traits, but little of their depth or soul.

That's because it swaps involving storylines for player-on-player interaction and therefore ends up feeling more like *Fallout*-lite rather than a genuine chapter in the much-loved series. There are no non-player characters to help drive narrative, nor massive set-pieces. Instead, your guidance is provided through audio holotapes and snippets of text cues that are easy to miss – and considering that the bulk of the game is spent undertaking small, point-to-point missions, it's rather essential for any enjoyment that you don't.

In short, it is frequently a frustrating experience, especially if you plan to travel the game world on your own. Things do pick up if you play with friends, which Bethesda would argue is ultimately the point. And, to be fair, it has provided a decent playground in which to explore and play. But the structure of the game is such that you soon get bored even as a group and it's crying out for updates to expand and layer the universe.

The one saving grace is that it is clear that the release version of *Fallout 76* is a mere shell of a game that will be expanded upon in time. Skip forward twelve months and it will likely be an altogether different and, hopefully, better game. It's essentially up to you whether you want to invest time and money in the prospect now or wait until it has matured somewhat.

If you decide to commit at this stage, at least you are getting a pretty – if not graphically spectacular – foray into the wasteland. Which, come to think of it, sums things up nicely.



The Handmaid's Tale: Season Two

Twentieth Century Fox → R2 DVD
£28



Having exhausted Margaret Atwood's novel with its first season, this sophomore year for the disturbing dystopian drama was free to carve its own path – albeit one steeped in even

more horror and menace as the show expanded its worldview and began to explore the foundation of its totalitarian society. Disappointingly, Fox still refuses to release the series on Blu-ray in the UK. This leaves fans with a DVD release that struggles to recreate the subtle gradations in the show's colour palette and ends up just looking murky and ill-defined instead. **AvB**



Opera

CultFilms → Region B BD & R2 DVD
£25



This gory 1987 giallo finds the perfect home for its horrific excesses in an opera house staging an *avant-garde* production of Verdi's *Macbeth*. Best remembered for its scenes

of the maniac tying up the heroine and forcing her to watch him kill, *Opera* is arguably director Dario Argento's last unqualified success and cuts a mighty fine figure on this UK Blu-ray. On top of a beautifully restored 2.35:1 Full HD encode (with a choice of LPCM 2.0 Italian and English soundtracks) it also offers a lengthy new interview with Argento, behind-the-scenes footage and a restoration demo. **AvB**



The Best of '80s Scream Queens

88 Films → Region B BD
£18



The title of this budget Blu-ray triple-pack is something of a misnomer as in no way do *Nightmare Sisters*, *Murder Weapon* or *Deadly Embrace* represent the best of any of the featured 'scream queens'. That said, if you're in the mood for some low-budget japes with Linnea Quigley, Michelle Bauer, Brinke Stevens and chums, then there's still plenty here to enjoy. The trio of Blu-ray presentations are as good as you could really hope for given the cheapo source materials, but sadly none of the extras from the old US Blu-rays are included. **AvB**



The 4K edition features a more violent cut of the movie



Denzel's first second helping

Hollywood legend finally breaks his no-sequel rule for this violent, revenge-fuelled actioner

→ THE EQUALIZER 2

At the end of 2014's *The Equalizer*, we left Robert McCall (Denzel Washington) becoming proactive in his role of neighbourhood do-gooder, all set to use his ex-special ops skillset to help those in need. This sequel throws us right into McCall's world of vigilante justice (much of his leads seem to come from his job as a Lyft driver), before introducing a grander plot around the murder of his former boss.

The Equalizer 2 is Washington's first appearance in a sequel, but his fourth collaboration with director Antoine Fuqua. The two make a good fit. The action here is well-handled, especially the final act where Fuqua builds an almost console game-style atmosphere through some smart location/effects choices, and Washington brings a level of believability to what is essentially a B-movie role.

Pacing is less frantic than you might expect (the film clocks in at 120 minutes) but it never really feels in need of a tighter edit – and by the end credits you'll likely be wondering if a third instalment is in the offing.

Picture: The movie's CinemaScope 4K HDR visuals are, on the whole, as efficient as its lead character. The digital camera origins are easily apparent in an image that's crisp and clean; only some obvious CG work in the final sequences have a softening effect.

HDR grading makes marginal but subtle gains: high-powered car headlights have that little bit more ping on Sony's 4K disc, but the film's natural colour palette won't provide much of a test for your display.

Audio: As good as the DTS-HD MA 7.1 mix that graces Sony Pictures' Full HD platter may sound, the Dolby Atmos track featured on this 4K release kicks things up another notch.

Subtle ambient effects work well to bring the film's varied locations to life, while dialogue is prioritised in the mix. Where the Atmos track really comes into its own, however, is during the film's storm-wracked finale (Chapters 14-15). Ferocious winds whip around the soundfield, keeping all of your speakers (including the height channels) engaged, while amongst this maelstrom of atmospherics, more localised sound effects such as explosions and gunfire still maintain clarity and precision.

Extras: The main extra here is the ability to watch the movie in Retribution Mode. Similar to the Vengeance Mode that accompanied Fuqua/Washington's *Magnificent 7*, this spins the film but cuts away occasionally to view video footage of its star and director discussing the scene in question. It's a nice idea, but there just isn't enough extra info imparted to make it essential, and the version used is the theatrical edit, which dials down some of the wince-inducing violence (the same applies to the normal viewing mode on the 1080p disc). And the obvious chemistry between the two makes you wish they'd record a regular commentary track.

Other extras are featurettes covering cast members, action sequences and Washington, deleted/extended scenes, a pop-up trivia track and – the pick of the bunch – some spoof auditions for the role of Robert McCall by NBA stars. **MC & AvB**



The star and director discuss the film's production in Retribution Mode (above)



HCC VERDICT

The Equalizer 2

→ Sony Pictures → Ultra HD Blu-ray & All-region BD → £35

WE SAY: More surprisingly brutal revenge cinema from Fuqua/Washington, on a solid 4K disc.

Movie: ★★★★★

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★★★★

OVERALL: ★★★★★



Bringing colour to the trenches

Peter Jackson's experiments with WWI footage yield unexpectedly immersive results

→ **THEY SHALL NOT GROW OLD**

Commissioned by the Imperial War Museum to commemorate the 100th anniversary of the end of the First World War, Peter Jackson's latest film attempts to transport viewers to the Western Front to experience what it was like for the British soldiers who were stationed there.

Culled from over 100 hours of archive footage and over 600 hours of audio interviews with veterans held by the Imperial War Museum and the BBC, the big talking point surrounding *They Shall Not Grow Old* is Jackson's decision to colourise and re-frame much of the (beautifully restored) footage. Now we can see these scenes just as the soldiers who were there would have done – or so the thinking goes.

But does it actually work? More often than not, yes. While the artificiality of the recreated colours and location sound is unavoidable, it does serve to make the footage that much more involving. Unfortunately, every so often comes a shot that doesn't quite work as it should, and these can really take the viewer out of the film for a moment.

Whatever the flaws (whether structural or technical), *They Shall Not Grow Old* is incredibly affecting. Jackson and his team have done an impressive job of bringing this archive footage to life with an astonishing immediacy.

Picture: The first 25 minutes and final 13 minutes of the film present the footage as it was originally shot, in black-and-white, presented in a 1.37:1 window. If nothing else, these two sections help showcase the meticulous restoration work that underlies this bold cinematic experiment.



As well as being re-coloured, the rest of the movie zooms in on the footage to fill the widescreen frame. New hues aren't what you'd call vivid, looking flat in the way that colourised footage always does.

Sadly, despite being screened in 3D in some cinemas, the Blu-ray encode is resolutely 2D.

Audio: The main focal point of the DTS-HD MA 5.1 mix are the interviews that run over the footage. Quality is excellent for the most part although, despite attempts to balance it all out, background distortion is still present in several extracts.

Newly created effects help punch up the mix footage from the Front, with the heavy shelling and gunfire as the soldiers go over the top (Chapters 7-9) delivered with enveloping surround info and some powerful LFE.

Extras: The sole extra is an informative 28-minute Q&A with Jackson, hosted by Mark Kermode, shot at the film's premiere earlier this year. **AvB**



Jackson employed lip-reading experts to help re-create snippets of dialogue from the silent footage

HCC VERDICT

They Shall Not Grow Old

→ Warner Bros. → All-region BD
→ £25

WE SAY: A fascinating experiment and an immersive snapshot of life on the Western Front.

Movie: ★★★★★

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★★★★

OVERALL: ★★★★★

Braveheart [4K]

Twentieth Century Fox → Ultra HD Blu-ray & All-region BD → £26



Mel Gibson's medieval epic may be a load of old tosh when it comes to historical accuracy, but that doesn't

prevent it from being a very entertaining piece of cinema. Based on a 4K scan of the original camera negatives, Fox's UHD release looks utterly gorgeous, despite sticking with HDR10 grading (Paramount's US platter released this Summer offers Dolby Vision). Meanwhile, the film's sound design and James Horner's score has probably never sounded better than it does here in Dolby Atmos. Gibson's chat-track has been ported to the 4K disc; more extras are found on the set's two BDs. **MC**



Arrival [4K]

eOne → Ultra HD Blu-ray & Region B BD → £35



Denis Villeneuve's acclaimed sci-fi drama doesn't offer much in the way of wide colour eye candy with its

deliberately drab visuals (you're much better served by his *Blade Runner* sequel in that regard), but its HDR grading makes for a welcome upgrade over the old 1080p release and a smart 4K debut title for UK label eOne. Sadly, given the intricacies and creativity shown by the sound design, there's no object-based audio remix; instead you get the same (admittedly impressive) DTS-HD MA 7.1 track as the Full HD Blu-ray. Nor are there any new 4K-exclusive extras. **MC**



Gosford Park

Arrow Academy → Region B BD
£25



If you go into Robert Altman's 2001 film expecting some sort of Agatha Christie-style mystery, chances are

you will end up disappointed. But if a meticulous, satirical study of the class divisions in 1930s England takes your fancy, then you'll have no problem seeing why *Gosford Park* ranks among Altman's very best work. Although the opticals for the film's opening credits look a little rough, Arrow's new restoration of the original camera negatives is otherwise excellent, delivering plenty of native grain and fine textures. Three commentaries head up the illuminating extras. **AvB**



Yardie

Studiocanal → Region B BD
£23



Idris Elba makes his directorial debut with this 1970s-set revenge drama based on the popular novel by Victor

Headley, although this film is a run-of-the-mill affair that offers few real surprises beyond a keen eye and ear for historical details (not least the terrific Reggae soundtrack). Studiocanal's Blu-ray features a bass-rich DTS-HD MA 5.1 mix that will have your furniture bouncing to the beats – although the thick Jamaican patois may have you turning on the subtitles. The AVC 2.40:1 1080p encode is more of a mixed bag, looking quite flat on occasion. **AvB**





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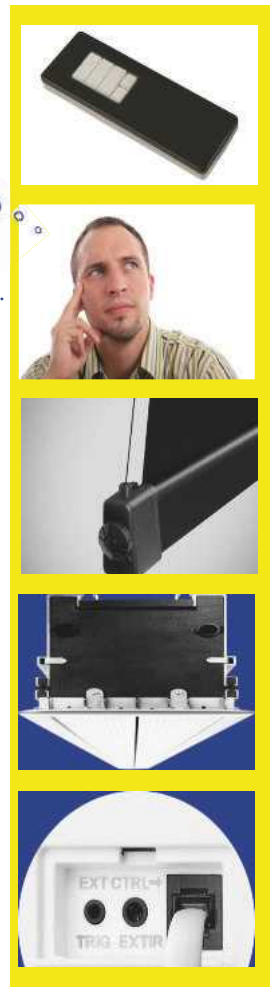
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The revolution will be televised

Things are going to get very messy indeed as HBO's hit science-fiction series returns to Blu-ray

→ WESTWORLD: SEASON TWO – THE DOOR

Not since the heyday of *Lost* has there been a series as difficult to discuss as HBO's *Westworld*. Like that earlier cult sensation, Jonathan Nolan and Lisa Joy's TV take on the 1973 film about a malfunctioning Wild West-themed robotic theme park relies heavily on multiple timelines and general obfuscation to keep viewers engaged and trying to unravel its mysteries.

The downside to all of this is that, if not handled with care or when allowed to meander for too long without any real pay-off, it can end up leaving viewers confused and dissatisfied. Just look at what became of *Lost* to see what we mean.

Thankfully, this second 10-episode season largely avoids these pitfalls. While the use of split timelines isn't as effective or nimble as those featured in the first season, they do keep you on your toes as you try to piece it all together retroactively. It also builds brilliantly on the ideas set up by the first season, while also twisting those concepts in fascinating and frequently unexpected directions.

More interesting still is the way it plays with our sympathies. As much as we all sided with the robotic 'Hosts' in the first season as they began to rise up against their oppressors, this time around things aren't quite so black-and-white – and the series pulls no punches in showing the bloody aftermath of the uprising and how it has changed those involved...

Picture: The second season of *Westworld* spreads its 10 episodes across three BD50 platters – four each



The season is at its best when it shifts focus to new characters and locations



on the first and second disc, two on the last. For the most part the 1080p encodes are framed at 1.78:1 – although several scenes are framed at 2.40:1 (for reasons we won't spoil here).

When it comes to the actual Full HD image quality, things can vary quite a bit. Daylight exteriors in the park are typically bright and extremely well textured. Unfortunately, colour grading used in some sequences means that this isn't always the case, occasionally leading to some stark inconsistencies in a single scene.

Spin up the Tea House raid in the fifth episode, for example, and there's a shot from behind the female archer (at 00:10:10) that looks far more dull and flat than those either side of it. This is an issue with the source material, but it still results in a pretty up-and-down viewing experience.

Audio: Brimming with dynamic, atmospheric effects, the show's DTS-HD MA 5.1 mixes are nothing less than superb. Unlike some TV dramas, the surrounds are used regularly, giving each environment a distinct sense of scale. Bass is deep and packs quite a wallop, while dialogue and music are also wonderfully rendered.

Extras: These include an exploration of the main themes (13 minutes); a look at the show's approach to violence (11 minutes); a trio of roundtable chats with the cast discussing different aspects of the season (15 minutes a piece); and 10 behind-the-scenes featurettes (running anywhere from three minutes to 13 minutes). It may not sound like much, but it's a clear case of quality over quantity. **AvB**

HCC VERDICT

Westworld: Season Two – The Door

→ Warner Bros. → All-region BD
→ £40

WE SAY: Despite some less-than-stellar 1080p visuals, this is still a complex and rewarding watch.

Movie: ★★★★★

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★★★★

OVERALL: ★★★★★

Secret Santa

Signature/FrightFest Presents
R2 DVD → £12



This festive splatter flick from Adam (*Jason Goes to Hell*) Marcus finds a family's Christmas dinner going wildly

off the rails when some spiked punch leads anybody who drinks it to act on the thinly veiled resentments they have for each other. Sadly, despite a solid start, this vicious black comedy can't sustain its momentum across a full-length feature and runs out of new ideas long before the end credits roll. While hardly top-tier, the DVD's anamorphic transfer copes quite well with the film's gritty aesthetic and impenetrable blacks. The sole extra is a 69-minute *Making of...* documentary. **AvB**



When a Stranger Calls: Limited Edition

Second Sight → All-region BD
£30



Fred Walton's 1979 thriller *When a Stranger Calls* is an odd movie. While the story's first act (a shot-for-shot

remake of Walton's 1977 short *The Sitter* – also included on the disc) and the finale are excellent, the middle section feels like a completely different film and is a bit of a drag. Second Sight's new restoration shares disc space with Walton's 1993 TV movie sequel *When a Stranger Calls Back*. It might not look as impressive as the original on BD, but for our money it's the superior film. A CD soundtrack is also bundled in the set. **AvB**



Hackers

88 Films → Region B BD
£15



This cartoonish 1995 techno thriller has Johnny Lee Miller and Angelina Jolie dressing like Camden Market

rejects and using their rad keyboard skills to fight corporate criminals. As silly as it all seems today, *Hackers* isn't without its odd pleasures and the film can be a lot of fun – just don't take it seriously. In addition to an attractive 2.40:1 Full HD encode and unexpectedly lively DTS-HD MA 5.1 soundtrack, this UK Blu-ray sports a 64-minute retrospective documentary and an exclusive audio commentary from director Iain Softley and critic/fan Mark Kermode. **AvB**



Fear the Walking Dead: Season Four

eOne → Region B BD
£45



Thanks to a jump forward in time, this spin-off is now running in parallel to its parent series – as evidenced

by a familiar face from *The Walking Dead* making the leap here. That's just one of the many changes this latest season brings with it, some successful, others not so much. Considering all the difficulties the show's aesthetic brings with it (fizzing grain; a colour palette so desaturated as to look almost black and white at times), these Blu-ray encodes are pretty damn good. Extras follow the same template as previous seasons. **AvB**



Unearthing a TV treasure in hi-def

Nigel Kneale's acclaimed sci-fi serial still dazzles some six decades after it was first shown

→ QUATERMASS AND THE PIT

When an archaeological dig in London unearths a strange metal capsule, the military are quick to conclude that it is an unexploded bomb. However, intrigued by tales of supernatural events in the local area dating back centuries, Professor Bernard Quatermass (Andre Morell) is convinced that the truth is far stranger. But even he cannot fully conceive of the capsule's origins, what it means for the history of the human race, or the devastating effect it will have on the city's populace.

It's impossible to overstate the effect the BBC's three *Quatermass* series (of which this 1958 production was the third) had on TV drama production. Made when live broadcasts were the norm and most smallscreen dramas still resembled filmed theatre, director Rudolph Cartier brought an innovative and stylish sense of cinematic flair to Nigel Kneale's imaginative and chilling scripts.

Even today, this six-part serial remains a hugely gripping and creepy production that feels far fresher than you would expect for a TV production that celebrated its 60th birthday earlier this year.

Picture: Presented in the original 1.37:1 aspect ratio, *Quatermass and the Pit*'s six 1080i50 encodes offer a significant improvement on the 2005 DVD release. That said, due to the various sources used the image quality is incredibly variable. By far the best-looking scenes are those where the restoration team were able to return to surviving 35mm fine grain film elements. Crisp and clean, they reveal far more detail than any previous release.



While the rest looks noticeably worse, compared to the DVD they are still sharper and better resolved – although a handful of these shots suffer from obvious aliasing and fluctuations in brightness.

Audio: This Blu-ray offers up a lossless DTS-HD MA dual-mono version of the remastered soundtracks created for the 2005 DVD outing. For all that, the serial still showcases the limitations of TV audio of the day and – outside of the clarity of the dialogue – there's really not much to get excited about here.

Extras: Each episode features an audio commentary moderated by Toby Hadoke and made up from new interviews with various members of the cast and crew (each recorded separately). There's also a reel of alternate credits from a 1959/60 omnibus repeat; a photo gallery; a 1991 featurette about the visual effects; extensive production documents (hosted as DVD-ROM content); and an eight-page booklet. **AvB**



Hammer produced a colour remake for the bigscreen in 1967

HCC VERDICT

Quatermass and the Pit

→ BBC Worldwide → Region B BD
→ £25

WE SAY: Easily the best way to enjoy one of the greatest sci-fi dramas to ever grace the smallscreen.

Movie: ★★★★★

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★★★★

OVERALL: ★★★★★

Running just shy of two hours, *Incredibles 2* is Pixar's longest film to date

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Pixar's latest animated sequel delivers plenty of AV superheroics on this US release

→ INCREDIBLES 2: ULTIMATE COLLECTOR'S EDITION

With Disney deciding in its infinite wisdom not to give the UK an Ultra HD Blu-ray version of *Incredibles 2*, we've turned to a US import to see how the film shapes up on our favourite home disc format.

The good news is the extra dosh needed to buy the imported disc is rewarded with a much better experience than the Full HD Blu-ray offers.

For starters, the film is yet another Pixar treat. It takes a little longer to hit its stride than the original *Incredibles*, but its more sophisticated take on family life in a household of superheroes pays off beautifully by the end.

Note: this 4K Blu-ray apparently features a version of the film (released theatrically in the US) that was not modified to reflect concerns raised about potential epilepsy triggers, whereas the UK Blu-ray and DVD pack the 're-edited' version (which also ran in UK cinemas). Bear that in mind if anyone in your movie den is photosensitive.

Picture: The CG animation used to bring *Incredibles 2* to life is fantastically detailed and rich, helping Disney's 4K disc deliver an obvious and consistent boost in clarity over its 1080p counterpart (even though the UHD encode appears to have been created from a 2K digital intermediate). Colours, too, look saturated and refined.

We've seen some complaints that the 4K BD presentation is overtly dark, but for us this HDR, wide colour version feels more authentic; it's much richer



in overall dynamic range, and more three-dimensional. There are some gorgeously punchy brightness peaks in the image, too, in particular around the 'Super Suits' and any interiors using artificial lighting.

Inky black levels underpin the dark end of the light spectrum, so that while the image might not be as aggressively bright as some HDR animated films, the additional contrast, versus the Full HD Blu-ray, is palpable. In fact, *Incredibles 2* offers some of the most beautiful animated images yet.

Audio: The 4K platter's Atmos soundtrack justifies its import cost even more than its pictures. The mix delivers a much larger and more refined soundstage than the DTS-HD 7.1 Master Audio track on the 1080p disc, including some involving and creative use of the overhead channels and lots of subtle effects that both boost the film's atmosphere and, on occasion, deliver extra unexpected humour.

Extras: You have to turn to the bundled 1080p version of the film and a dedicated extra features disc for the film's supplemental material.

Highlights include a commentary from a quartet of animators; a look back through the career of director Brad Bird; a bonus animated short covering Jack Jack's stay at Auntie Edna's house; 10 deleted scenes (largely created from drawings and previz graphics); and an often terrific set of featurettes looking at various aspects of the film's creation – including one focusing on how the real lives of the crew informed the film's strikingly familiar 'real family' scenarios. **JA**

HCC VERDICT

Incredibles 2: Ultimate Collector's Edition

→ Walt Disney → Ultra HD Blu-ray & All-region BD → £30 (US import)

WE SAY: One of the best animated 4K Blu-ray releases to date – there's no excuse not to import a copy.

Movie: ★★★★★

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★★★★

OVERALL: ★★★★★



Going back to the beginning

Revisit the early years of two titans of the 'New Hollywood' era with this boxset

→ DE NIRO & DE PALMA: THE EARLY FILMS

Arrow's latest boxset focuses on the early careers of Robert De Niro and director Brian De Palma, which overlapped several times in the late 1960s.

Greetings (1968) is an episodic New York satire about three young friends – lovelorn Paul (Jonathan Warden), conspiracy nut Lloyd (Gerritt Graham) and aspiring peeping tom Jon (Robert De Niro) – as they try to dodge the draft.

Shot first, but released after *Greetings*, goofy comedy *The Wedding Party* (1969) stars Charles Pfluger as a groom who gets cold feet while visiting his bride-to-be's eccentric family. This time around De Niro only features in a supporting role.

Hi, Mom! (1970) doubles-down on the black comedy and picks up the story of De Niro's Jon from *Greetings*, as he returns from the Vietnam war, tries to make a go of it as an adult filmmaker, gets cast as a cop in a radical black theatre production and, ultimately, turns into an urban terrorist.

Wearing their influences on their sleeves (well, what else would you expect from De Palma?), the three films have a fairly freewheeling approach that doesn't always pay dividends. However, you can clearly see De Palma (and to a lesser degree De Niro) honing his craft throughout – and by the time you get to the brilliantly subversive *Hi, Mom!* you'll notice a clear through-line to many of his later films in both visual flair and social commentary.

Picture: All three films have been newly restored in 2K for this boxset. *Greetings* is the roughest-looking of the trio – on top of the heavy grain there's obvious



damage including tram-lines and a pattern of speckling that runs from 00:12.46 to 00:18.30.

The black-and-white *The Wedding Party* is the most impressive of the three (perhaps because it was sourced from the original negative, while the others use internegatives). It exhibits excellent greyscale, stable contrast and finely resolved grain.

Hi, Mom! returns to the gritty look of *Greetings*, but features far less damage and has a slightly more refined appearance (outside of some 16mm inserts).

Audio: All three films feature restored LPCM mono soundtracks. While nicely cleaned up, they suffer from the limitations of the guerilla-style shooting methods that were frequently employed.

Extras: Bonus bits are a commentary on *Greetings* by critic Glenn Keny; an appreciation of the three films; two interviews with producer Charles Hirsch; a press book gallery; a *Hi, Mom!* trailer; and two booklets of essays. Not bad, but less than we'd hoped for. **AvB**



Whoops... Robert De Niro is listed as 'Robert Denero' in *The Wedding Party's* end credits

HCC VERDICT

De Niro & De Palma: The Early Films

→ Arrow Video
→ Region B BD → £50

WE SAY: A little light on extras, but still by far the best releases any of these three films have ever had.

Movie: ★★★★★

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★★★★

OVERALL: ★★★★★

Age of Consent

Indicator → All-region BD
£16



James Mason plays a disgruntled artist who moves to an isolated Australian beach cabin and Helen Mirren his

uninhibited teen muse in Michael Powell's unexpectedly tender and playful final feature. This excellent Blu-ray package offers Powell's original 107 minute cut and the studio's 99 minute re-edit (each with its own distinct score), nicely restored in 1.85:1-framed Full HD with DTS-HD MA mono audio. Generous extras include a restored HD presentation of Powell and Pressburger's final collaboration, the 1972 Children's Film Foundation production *The Boy Who Turned Yellow*. **AvB**

★★★★★

Atoll K

BFI → Region B BD & R2 DVD
£20



This Blu-ray outing for Laurel and Hardy's last film (aka *Robinson Crusoe Island*, aka *Utopia*) is arguably of more

interest for the extras it contains than for the film itself. Presented here in the longest known English language version (running 99 minutes) and restored using original 35mm nitrate elements, *Atoll K* remains a real slog. However, this disc houses plenty of genuine treats, including five Stan and Ollie solo shorts, two amateur films of the duo touring the UK (with commentary), and two further pieces of newsreel footage – all restored and presented in Full HD. **AvB**

★★★★★

The Magnificent Ambersons

The Criterion Collection → Region B BD
£18



Completely re-edited by RKO and saddled with an ill-fitting happy ending prior to its 1942 release, the uncut version of Orson Welles' adaptation of *The Magnificent Ambersons*

is the holy grail for many film fans. While that remains elusive (the excised footage was reportedly dumped in the sea), Criterion has done a wonderful job presenting the existing version on Blu-ray, with a new 4K restoration bringing a real sense of stability to some clearly inconsistent source material. Comprehensive bonuses include two commentaries, a video essay, interviews and an earlier 1925 silent adaptation. **AvB**

★★★★★

Andy Serkis takes on a Disney fave

The mo-cap maestro isn't monkeying around with this ambitious take on Kipling's classic tale

→ **MOWGLI: LEGEND OF THE JUNGLE**

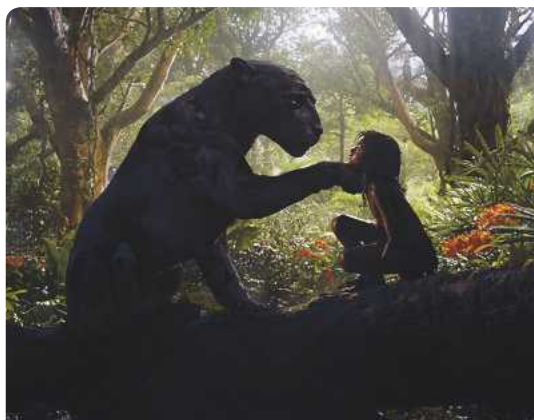
Welcome to *The Jungle Book*, via *Planet of the Apes*. The animals still speak, but there are no songs and little humour. King Louie is AWOL. No one eats Paw Paws. Instead, Andy Serkis's long-delayed reworking of the Kipling classic brings (literally) an animalistic aesthetic to the oft-told tale, trading sing-alongs for savagery and shocks.

This harder edge probably put the mockers on its box office appeal, prompting Warner Bros. to sell it for Netflix distribution. However, while touted as a darker take, we'd argue it's not quite dark enough; this man-cub is an awkward tween.

Perhaps the biggest problem with *Mowgli: Legend of the Jungle*, however, is that we've seen it all before. There are a few new ideas: Mowgli's best friend is now an albino cub called Bhoot and we also get to spend a lot more time in the man-village than you might expect. But that's about it.

The voice cast is solid, even if the denizens of this jungle sound more like they hail from Hackney than Central India. Benedict Cumberbatch voices Shere Khan, while Christian Bale plays Bagheera, Andy Serkis is Baloo and Cate Blanchett hisses Kaa. Rohan Chand does a perfectly fine job as the titular hero.

Picture: After the technical triumph of the recent Disney update, *Mowgli...* has a tough act to follow. Thankfully Serkis opts for a rather different approach. His film is more obviously grounded in reality, thanks to the extensive use of live action jungle sets, and rather than strive for photo-realism, he takes anthropomorphic license with the characters.



The picture has a 'Scope frame, and is available in HD and 4K HDR or Dolby Vision depending on your display and streaming device.

The cinematography of Michael Seresin (who has previously worked with Serkis on the *...Apes* movies) is on the right side of spectacular, emphasizing the sweeping vistas of the India jungle. And the grade isn't dour; the jungle appears lush while the village sequences are bright and celebratory.

Audio: The film's sound design (available in 5.1 or Dolby Atmos) is fittingly cinematic. Jungle ambiance adds space and height to the environment, and the measured use of bass is convincing. There's a lovely, deep rumble that emanates from Bagheera's throat, and we know Shere Khan is trouble from the sheer weight of his paw pads. For sonic intensity, the 'Running' sequence, in which Mowgli competes with other cubs for a place in the pack, is an entertaining system stretcher. **SM**



The film was originally slated for release in 2016 before being pushed back

HCC VERDICT

Mowgli: Legend of the Jungle

→ Netflix (Warner Bros.)

WE SAY: Nothing you haven't seen before, but still worth a look (and a listen, thanks to its superb sonics)

Movie: ★★★★★

Picture: ★★★★★

Audio: ★★★★★

OVERALL: ★★★★★



This season is based on *Drums of Autumn*, the fourth of Gabaldon's eight *Outlander* novels (a ninth is currently being written)

→ **OUTLANDER: SEASON FOUR**

→ Amazon Prime Video

The Starz/Amazon time travel drama relocates to North Carolina for its fourth season, after highlander Jamie Fraser (Sam Heughan) and bride Claire Randall (Caitriona Balfe), erstwhile WWII nurse magically transported back to the 18th century, are shipwrecked on the coast of Georgia.

Based on the series of books by Diana Gabaldon, and developed for TV by *Battlestar Galactica* alumni Ronald D. Moore, the show is outwardly a convoluted (and, frequently, very steamy) romance, but up close is far more steely, complex and engaging than that might suggest.

Much like preceding seasons, this latest round of adventures unfurls at a cracking pace. An early return to Scotland for our couple is abandoned when they decide to stay Stateside, a decision that brings them face-to-face with the realities of slavery. Add historical intrigue, and a healthy dose of pirating, and we're soon back in familiar territory.

Like all the best genre shows, *Outlander* has built and refined its own mythology, rewarding long-term viewers with incremental depth and nuance. Much of its success is down to believable, well-drawn characters, and laser-focused story-telling.

The show is presented in HD 16:9, and looks sharp. Production design is outstanding, with convincing period detail.

The 5.1 sound design is equally appealing. There's appropriate sonic steerage, with the surrounds finding plenty to do amid the action. The soundstage also provides an immersive platform for the distinctive lilting music of Bear McCreary (also of *Battlestar Galactica*, and now *The Walking Dead*).

Four seasons in, *Outlander* remains a genuine treat for both genre fans and lovers of well told drama. Already renewed for seasons five and six, it's one show that's well worth finding time for. **SM**

★★★★★

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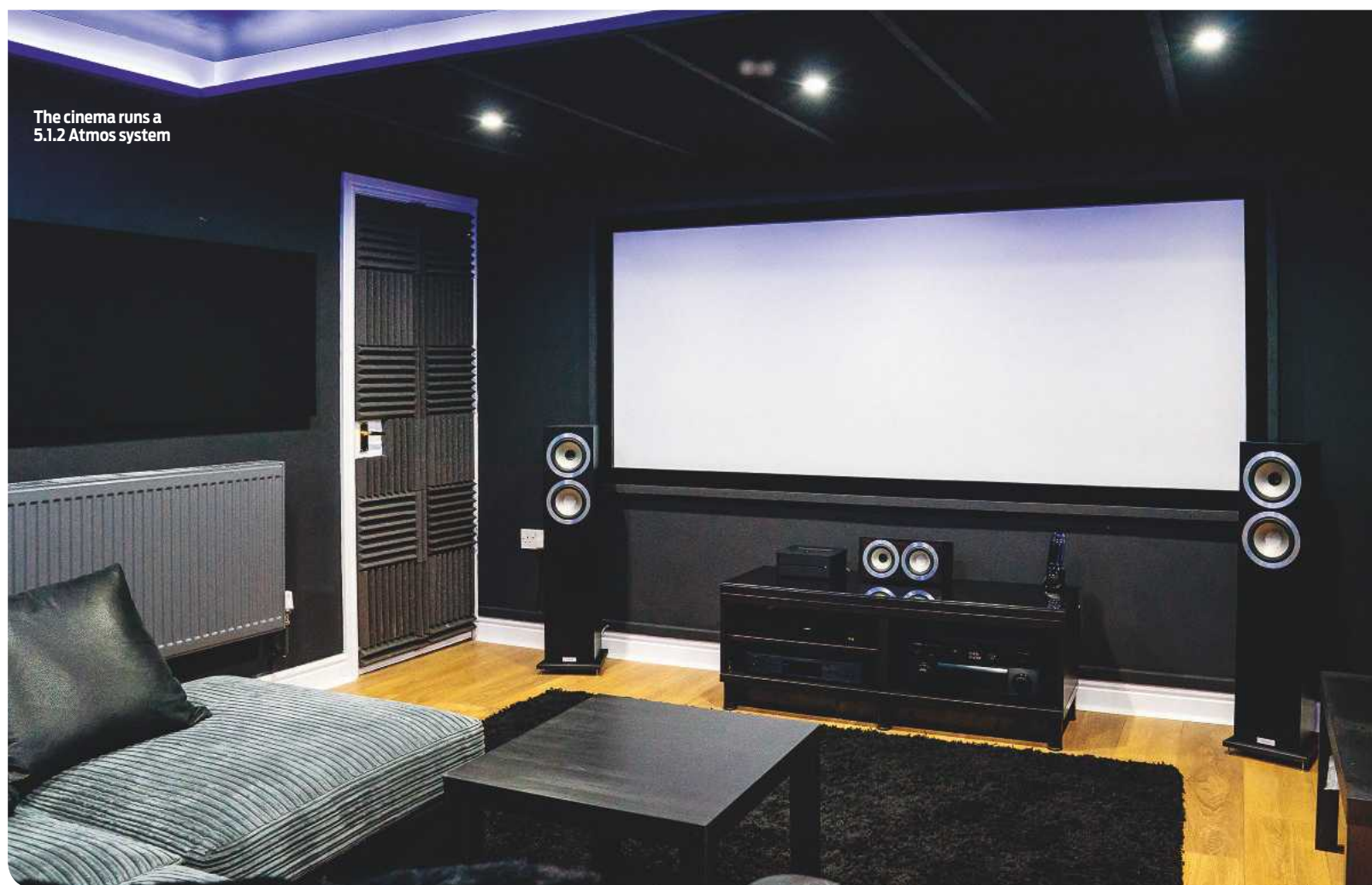
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Picture perfect

HCC reader **Martin** says the transformation of his photo studio into a lush-looking movie and music den means he's finally happy after 25 years of dabbling with AV



Welcome to the AV-Holics Hall of Fame! Introduce yourself...

My name is Martin Hillary, 46, and I'm a self-employed wedding photographer just outside Selby in North Yorkshire.

How long have you been into home cinema?

Ever since my dad got his first surround sound system. It was a Jamo sub/sat Dolby Surround setup and it blew me away. It must have been going on 25 years ago. My next purchase then was a 32in widescreen CRT TV – that thing was heavy!

From that point on I was hooked, investing in LaserDisc and the huge cost of software – mainly from the States. I was then an early adopter of a Pioneer DV505 DVD player. I think I paid nearly £600 for it at the time.

I've owned all sorts of speaker systems and amps. A big regret is selling my LaserDiscs and player. I had the *Star Wars* NTSC Collector's Edition, which is now worth quite a bit!

What's in your AV setup now?

I use a 7.2-channel Yamaha RX-A1050 receiver for the amplification. I love the Yamaha sound and have owned several Yamaha AVRs in the past, but kind of regret not getting one that would drive more speakers as I have only two Atmos ceiling speakers.

My projector is an Epson EH-TW9300. This projects on to a home-made screen, but it has professional screen material that I purchased, tensioned and bent around a frame before mounting on the wall.

Main speakers are from the Tannoy DC6 range. I've owned Tannoy before and love the

sound. The ceiling speakers are made by PSB. The subwoofer, which is behind the sofa, is a BK Electronics XXLS400. It's certainly got enough 'oomph' for the room.

I then have a Sony UBP-X800 UHD player, which is now only used for the odd bit of streaming from Amazon and Netflix as I use an Oppo UDP-203 for playback of discs, plus a Bluesound Vault 2 for audio. This has a lovely, quality sound and I still purchase CDs and rip them using this.

Everything is controlled by a Harmony Ultimate remote – even the lighting which only comes on during music playback.

Whereabouts in your house is your home cinema?

Well there is a story behind this. We moved into our current house for extra space and



Fitting the drop ceiling was the trickiest part of the build, says Martin

because I run my own photography business. The then garage (which had an upstairs too) made an ideal photography studio for portraits as well as consultations for weddings, so when we purchased the house we had it converted.

Three years later I wasn't shooting portraits any more (I'm too busy with weddings) so there wasn't a need for studio lights and backdrops, etc. It was all the excuse I needed to move the home cinema kit from the living room into the portrait studio – after, of course, redecorating and putting in a new ceiling/fittings. And I still use the room for wedding consultations!

Did you get any help from professionals when fitting out the cinema?

No, it's all been done by myself. It's been a learning process and I would do a few things differently if I was to do it again.

The biggest work went into the ceiling as I wanted to drop it slightly to put the LED lights in. All the panels that have been put in are MDF, covered in a thick black felt material as I wanted to break up the black paint everywhere.

As the floor is laminate I've put down a large high-pile black rug to help with sound reflections. I've put acoustic foam on the doors and although I didn't expect much of a difference they've actually helped to reduce sound reflections. I'm in the process of adding a few bits of artwork to the back and side wall.

What was the last thing you added to your system?

The Vault 2 but I'm always buying and selling and trying to improve things as finances allow.

Are you thinking of upgrading anything else?

I think for the first time in around 25 years I'm pretty happy with things and I think my 'hobby' has spent enough at the moment, although there are always discs arriving through the letter box, and I'd like to replace the blinds and curtains in the room with an electronic black-out blind that completely seals any gaps in the window.

The only way to stop light leak at the moment is to pull the blind down and the curtains across (which are blackout). The result is pretty good, though.

What's your favourite bit of kit and why?

The Epson EH-TW9300 projector. I'm still in awe when I see a 4K HDR image at 110 inches!

The great thing about the 9300 is the lens memory function, which means I can zoom to a 2.40:1 aspect ratio to fill the screen and have black side bars for 16:9 material. I couldn't decide which ratio to use for the screen when I first installed it but I prefer the wider aspect.

What movies discs do you use to show off your system?

At the moment *Paddington 2*. It's got a stunning picture and it's a wonderful family

movie. *The Matrix* is still a firm favourite too, and although I'm not the biggest fan of *The Great Wall* it makes a good demo disc.

And what are your Top 5 favourite flicks?

2001: A Space Odyssey; *Star Wars: Episode IV – A New Hope*; *The Matrix*; *Somewhere In Time*, which is a great little time travel movie; and the wonderful *Silent Running*.

Do you stream movies/TV from Netflix, Amazon, Sky, etc?

I do occasionally but I'm not looking forward to the day when discs are no longer available. I'd sooner own the movie on disc and watch it from that. It's something tangible and it feels like you actually own something.

I hate the fact everything is going more towards convenience than quality.

Does the cinema room get a lot of use?

About twice a week on average, although as it's at the end of the house I can shut the door and watch movies late at night without waking up the kids – so I do have the odd late-night bit of viewing.

And, lastly, what do your friends and family think of the cinema?

Everyone who comes in loves it. I've even had photography clients who insist on getting a demo! ■

Living room luxury

HCC reader **Brendan** mixes his passion for vinyl with a living room cinema setup offering 4K visuals, simplified control and an eye for an AV bargain...



Wharfedale's DX-1SE package
– sleek and compact

Welcome to the AV-Holics Hall of Fame – introduce yourself!

I'm Brendan Geoghagen, from Dublin. I work as an IT Networks Manager.

How long have you been into home cinema?

This is probably a two-part answer. Initially, at home with my parents, I was the movie one, always buying new tech to stuff into my Mam

and Dads' living room. When we got our own home that allowed me to build out my own setup from budget surround to what I have today. So you could say I've been dabbling for a long time.

What hardware's in your AV setup?

My system is in my living room. The screen is a wall-mounted 55in LG 4K LED TV, fed

from a Denon AVR-X2300W receiver.

My speakers are the Wharfedale DX-1SEs in sleek black in a 5.1 system – both the AV receiver and speakers were purchased recently following your glowing reviews in HCC #268 in early 2017.

Sources include a Sky Q Silver PVR, Sony PS3 and a Sony UBP-X800 player. A Logitech Harmony 650 ties it all together, controlling all my devices with a single remote.



Kong: Skull Island – a demo favourite

Roughly how much have you spent on your cinema?

As far as mid-range/budget setups go it's not all that hard on the pocket – a total of around €2,000 for all the tech in the system.

What was the last thing you added to the setup?

I've bought a vinyl phono stage for my Denon receiver to pull my Pro-Ject Essentials 2 vinyl deck into the mix. I've also upgraded its cartridge to make my vinyl pop.

Are you thinking of upgrading anything soon?

I would love the space to build a dedicated cinema room, maybe an extension in the future... Who knows?

What's your favourite bit of kit?

The Denon AVR. It's so versatile and makes all my sources sound great. It has everything you might need for a living room setup.

What movies/discs do you use to show off the system?

Well, I've recently played *The Martian* on Blu-ray which looked and sounded fabulous. But I find *Dawn of the Planet of the Apes* and *Kong: Skull Island* both look amazing on Blu-ray. Texture, depth and clarity of the image really comes through. The speakers and amplifier are easy to show off with atmospheric movies like those – you're able to hear every footstep and subtle movement.

And what are your Top 5 favourite flicks?

Personal favourites would be *Heartbreak Ridge* with Clint Eastwood, *Skyfall*, *Saving Private Ryan* and any of the Dark Knight films. *Olympus Has Fallen* is a great popcorn movie, too.

Do you stream movies/TV from Netflix/Amazon/Sky etc?

Yes. The 4K TV has a number of services built

in and my subscriptions extend from the Sky Q store into the 4K Netflix options, which look great.

Is the setup used regularly?

Every day for regular television, and at weekends I indulge with a new Blu-ray title (much to my wife's dislike, as she doesn't like the sub much...).

What do family and friends think of the cinema?

They don't really get my fascination with AV tech. My wife certainly doesn't like the complexity of it all. But those that understand the joy and escapism a good movie can bring are impressed when they see it in action.

Have you any plans to add Dolby Atmos/DTS:X?

I've no immediate plans for Atmos. My living room doesn't lend itself well to all the speakers. Nor does my wife, for that matter! ■



Brendan's Pro-Ject turntable adds vinyl replay to his system

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Photo courtesy of Gary J.Fernandez

Stairway to heaven

HCC reader **Patrick** has crafted a top-storey projector-based cinema room, and persuaded Amazon's Alexa to control it all for him. Time to take a tour...



Patrick says the 120in screen makes the room feel like a true 'home' cinema

Welcome to the AV-Holics Hall of Fame – introduce yourself!

I'm Patrick, aged 43.

How long have you been into home cinema?

Since about 25 years – the first time I heard *Top Gun* played on VHS through a Pro-Logic system. I've been through all of the phases from that to rear-projection, LaserDisc, THX and just about everything in between.

The dream was always to have a dedicated cinema and this room has been a labour of love for a couple of years in trying to get it right.

What hardware is currently in your system?

I have a 120in Sapphire SFSC266 fixed-frame projector screen, used with an Optoma HD141X 3D1080p projector (and 10 pairs of 3D glasses). My speaker system is 5.1.2 and uses Jamo E350s for front and rear channels,

a Q Acoustics 2000 centre speaker, Monitor Audio C165 in-ceiling speakers for Atmos, and a REL T5 subwoofer. This is driven by an Onkyo TX-NR636 AVR, with a Sony BD player, Apple TV 4K, Sky+HD, Amazon Fire TV 4K and Pro-Ject turntable as sources.

I also have Philips Hue side and ceiling lights, plus Alexa full voice control via a Logitech Harmony Hub.

Did you get any help fitting out the room?

No. I did it all myself, from the ceiling lights and speakers, PJ and screen mounting to the wiring and the decorating. It was one of those ever-evolving D.I.Y. projects!

What was the last thing you added to your setup?

Alexa and the Harmony Hub. I've tinkered for years trying to get the simplest and best control setup and think I have finally found it.

Are you thinking of upgrading anything soon?

First stop will be some new front speakers – the Jamos are in need of an upgrade. Then the big decision is the upgrade to a 4K PJ.

Is there a particular 4K PJ you have your eye on?

I've always been a huge fan of Optoma's range – it has a great balance of quality, reliability and picture alongside cost effectiveness. We're dead set on the UHD65.

And your favourite bit of kit?

My favourite piece of kit is the fixed-frame screen – it has really made the room feel like a true 'home' cinema.

What movies/discs do you use to show off your system?

Interstellar, *Avatar*, *Tron: Legacy* and any of the new *Star Trek* movies.



The room offers plenty of seating for family movie night



And what are your Top 5 favourite flicks?

Interstellar, Kick-Ass, Seven, The Shawshank Redemption and Back to the Future.

Do you stream movies/TV from Netflix/Amazon/Sky etc?

Apple TV is our go-to device for streaming – almost everything we watch is from here, including Netflix for TV shows. The Amazon Fire fills in the blanks!

How often do you settle down for movie night?

We have a 'real' movie night once a week – a popcorn, good movie, lights down sort of night – but the room gets used at least a couple of other nights of the week for shows such as *Game of Thrones* and the new *Star Trek: Discovery*.

Our 13-year-old daughter is very fond of using the room with friends as well. We love that it's a real family room so we always have family and friends around. It's become a real focal point of the house.

What do friends and family think of the cinema?

They all love it and will find any excuse to pop round for a movie or sporting event. New visitors always think we are crazy but then they sit down and enjoy a night with us and they totally get the 'why' part of home cinema. The room has become the best investment we've ever made ■

Pull-down, listen up

HCC reader **Chris** has used the second-hand and ex-display market to assemble an affordable projector-based setup that brings movie, TV and gaming entertainment to his living room



Roth OLi speakers deliver the system's 5.1 audio

Welcome to the AV-Holics Hall of Fame – introduce yourself!

My name is Chris Rule, I'm 31 and I'm a manager in the rail industry.

How long have you been into home cinema?

About 10 years. I started off more as a computer geek – the first home cinema product I bought was a used Cambridge Audio AV receiver to connect to my custom gaming PC. I then wired Wharfedale speakers and it all evolved from there. I don't even have a PC now.

What kit is in your current cinema setup?

I have an Epson EH-TW7200 Full HD projector projecting on to an 80in pull-down screen (I also have a TV behind the projector screen). The speakers are Roth Audio's OLi RA 5.1 pack, with floorstanding RA4s at the front and standmounted RA1s at the back, plus the C30 centre channel and KH30 subwoofer.

Powering the system is a Denon AVR-X2400H. I use a Samsung PVR for Freeview HD, a Roku Streaming Stick+, a Sony Blu-ray player and a Sony PlayStation 3.





current one is on a shelf rather than properly ceiling-mounted.

What's your favourite bit of kit and why?

I love the Roth RA4s at the front. I saw the *HCC* review a few years ago [see *HCC* #233], not long after that I found them at half the price on Roth's own eBay store. They were delivered the same evening by one of their directors who happened to live near me! I like the Roth's slightly industrial and imposing look; I can never understand why people pay a fortune for speakers to be hidden away from sight.

What movies/discs do you use to show off your system?

I use the intro sequences from the *The Dark Knight Rises* and *Quantum of Solace*. I've also recently bought *Kong: Skull Island* after seeing it's everyone's favourite demo disc.

And what are your Top 5 favourite flicks?

I like *The Dark Knight Trilogy* and the *Bourne* films (but not *...Legacy*). Other favourites are *Ex Machina*, *...Fury Road* and *A Monster Calls*.

Do you stream movies/TV from Netflix/Amazon/Sky etc?

Yes, Netflix and Amazon Prime via the Roku Streaming Stick+.

Does the cinema setup get a lot of use?

Yes. For all our movies or Netflix viewing we use the PJ. It's only really sitcoms or general channel flicking when we'll use the TV.

And what do your friends and family think of the cinema room?

Everyone loves it; most people hear about it and think it's a very strange thing to spend money on. Then they experience it and start listing the movies they'd like to watch... ■

What was the last thing you added to your system?

The Epson EH-TW7200 was a recent eBay purchase. Almost everything in the system was bought used or ex-display.

Are you thinking of upgrading anything else?

I need to pause on the upgrades for a while, but I would like a better sub. Maybe a sealed unit to give bass a bit more punch and finesse. Atmos modules will probably happen first.

Right now I can't justify the expense of a 4K upgrade. The HD images from the Epson PJ are impressive enough for the moment.

Whereabouts in your house is the cinema room?

In our living room. Once I moved out of a room in a shared house and into my own place it made sense to put the amp and speakers in the living room with the TV.

Did you get any help from professionals when fitting out your system?

No. It didn't require a great deal. It's not exactly a discreet setup.

The original projector purchase around five years ago (an Epson EH-TW3200) was very much on a budget, which is why the

Share your cinema system in the mag!

If you want to be in *HCC*, you'll need to send us some hi-res images of your cinema room. Here are a few tips...

1. Go big. Set your camera to take images at the largest possible size, and at the highest resolution. Don't worry about cropping or resizing – we will make them print-ready.
2. Get in focus. Make sure your photos are as sharp and clear as possible. If you have one, use a tripod, or place your camera on a flat, steady surface and take pictures on a delay. The sharper they are, the bigger we can print them.
3. Let some light in. While we tend to watch

- movies in the dark, our cinema systems look their best when they are lit. If you can shoot with natural daylight, do so. If your room doesn't get a lot of light (a garage conversion, for instance) then switch on whatever lights are fitted. Avoid using flash wherever possible.
4. Be thorough. Send photos of as much of the room as possible. Images of both the front and back of the room, the kit rack, speakers, seating, disc shelf, movie poster art... The more the merrier.

5. Don't be shy. Send a picture of yourself!

6. Show us more. Got pictures of your room before it was a cinema? Or snaps of work being done? We love to see these, too.

Now what?

Email your images to letters@homecinemachoice.com with the subject heading 'AV-Holic', and provide your answers to the relevant questions above – then we'll be in touch!

AV Avenger

The future of mobile video is vertical, the TV industry was told at a broadcast conference.

Steve May wonders if Hollywood might one day follow suit

WHAT DO YOU think the biggest technology challenge facing the broadcast business is right now: 4K HDR? Next-generation audio? 8K? No. Apparently, it's aspect ratio – specifically, shooting vertical video for consumption on mobile phones.

At least that's the view of Sam Barcroft, CEO of Barcroft Media. Barcroft is a huge global producer of factual TV shows, and runs specialist YouTube channels like Barcroft Cars, Barcroft Docs and Bear Grylls Adventure.

Barcroft was answering a question posed by Richard Lindsay-Davis, CEO of the DTG (Digital TV Group), at the annual Out Of The Box industry summit. It was almost a throwaway comment, but one so seismic in implication that I was digesting it long after the canapés.

Barcroft sat on the 'New Format, New Platforms' panel. Vertical video, he observed, was an opportunity for content creators. 'You only have to see how many people hold their phones with one hand,' he commented. And he's right.

I'd wager most people only watch videos landscape on their smartphones because they have to.

However, his comment met a predictable response when I related it on Twitter. 'That's tragic,' was one retort.

That said, at least one reply – 'the content opportunities behind this shift are incredible...' – took a less narrow view on narrow video.

Until now, whether at home, in the cinema or on a portable device, visual entertainment has (more or less) adopted the same basic aspect ratio: that's to say, horizontal. After all, it's how our eyes are arranged. This 16:9 shape also conveniently scales quite happily between display types. But shifting to a vertical format destroys that cosy relationship. It's either the end of days or the killer app mobile content makers have been looking for.

Snappy snaps

Thanks to Instagram and Snapchat, millions are shooting their own videos on phones in a skewed format. And professionals are eager to catch up.

For instance, vertical framing has been gathering pace in the online music video arena. There's a stack



of examples on YouTube, from stars like Taylor Swift, Coldplay and Shakira. Although because of the way these have been uploaded to the streaming service, they only play in a centre bar, horizontally, which makes them kind of pointless. Clearly there are technical issues to be resolved to avoid this kind of basic fail.

If you want to see some interesting examples of vertical video, take a look at the work of director Sam Lecca, over on Vimeo. These appear to be have been created for a now defunct portrait video player app, developed for streaming music service Vevo.

Adobe has developed an automated cropping tool for content creators, called Smooth Operator. This automatically slices vertical video from footage originally shot in 16:9 format using AI to understand the visual focal point of an image, and crops dynamically. These kind of workflow tools are essential if vertical video is to gain commercial traction.

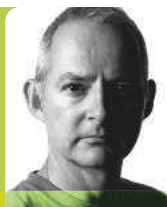
Beyond music, arguably the biggest win for vertical video will be news. Deborah Turness, President of NBC News International, now heads up Euronews and says she sees that channel as particularly ripe for creative experimentation. All news on Euronews is now being shot with Apple iPhones. 'It allows our journalists to produce very immediate, transparent coverage', explained Turness. They only roll out big pro cameras when they have to shoot heads of state, 'because they won't allow us to film them on our iPhones.'

Driven by this experimental buzz, it can only be a matter of time before someone tries their hand at narrative content in a vertical format – Steve Soderbergh has come close with his shot-on-a-phone thriller *Unsane*, which was then presented at a 1.56:1 aspect ratio.

Of course, it's early days, and genuine vertical video isn't going to turn up on Blu-ray any time soon. But expect more content creators to embrace the format in 2019. The shape of online video is changing, whether you like it or not ■

Would you watch a vertically cropped version of your fave film? Let us know: email letters@homecinemachoice.com

Steve May is keen to set up his own Snapchat account so he can join in with Generation Z. He just needs to work out how to turn on his phone



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